

ACLCL Working Papers

Volume 2, issue 1

Table of Contents

Russian Double Object Constructions <i>Marina Dyakonova</i>	3-30
Parts-of-speech systems and morphological types <i>Kees Hengeveld</i>	31-48
Dynamic perspectives on lexical categorisation <i>Niels Smit</i>	49-75
Emphatic Multiple Negative Expressions in Dutch A by-product of the loss of Negative Concord <i>Hedde Zeijlstra</i>	77-103
How to submit papers?	105-106

Russian Double Object Constructions*

Marina Dyakonova
University of Amsterdam

The article addresses the question of the order in which the arguments are projected in Russian Double Object Constructions. Particularly, I reject the proposal that an accusative Theme argument (syntactically a direct object) asymmetrically c-commands a dative Goal (syntactically an indirect object), with both being introduced within VP (Bailyn 1995). Alternatively, I propose that the Goal is always outside the primary event expressed by VP and is introduced by a functional Applicative Head (V_{APPL}). Under the present approach, the c-command relations are the reversal of what has been previously proposed, i.e. a dative Goal is structurally higher and thus c-commands an accusative Theme. I draw some facts that present a challenge for the previous analysis and support the proposed account. Finally, I propose that the V_{APPL} Analysis can be extended to account for copular possessive constructions in Russian.

1 Introduction

While applicative constructions, and the VP-internal structure in general, have been extensively studied in other languages, Russian, to the best of my knowledge, has not been given much attention in this respect. The most explicit study on the architecture of the Russian VP goes back to Bailyn (1995).

The present article is an attempt to shed some more light on the issue of argument projection in Russian. In particular, I am addressing the question of syntax and semantics of non-subject arguments of ditransitive verbs in the language. I will argue that an indirect object is not projected inside the lexical VP, as has been previously assumed (Bailyn 1995). It will be shown that it is introduced by a functional head taking the lexical VP as its complement. Following previous research, I coin this functional head V_{APPL} . Thus, an indirect

* I would like to express my gratitude to the two reviewers for providing their valuable comments which help me to improve the first version of this paper. All mistakes remain solely mine.

object is structurally higher than a direct object introduced in the specifier position of VP. I will furthermore propose that V_{APPL} may not be limited to introducing an indirect object but could also be involved in the derivation of copular possessive sentences.

The paper is organized as follows. In section 2, I show that Russian lacks ditransitive alternations and that sentences with verbs taking a Goal¹ and a Theme argument are equivalents of English Double Object Construction. In section 3, I outline the previous proposal concerning the structure of Russian VP (Bailyn 1995), which treats accusative Theme argument as being structurally superior to dative Goal. I point out some challenges the earlier account faces in Section 4. Based on these challenges, in Section 5, I lay out an alternative proposal inspired by the research on applicative constructions in other languages (Marantz 1993; Pylkkanen 2002; McIntyre 2006), and propose an extension of the analysis to possessive constructions in Russian in section 6. Section 7 concludes the paper.

2 Inexistence of Ditransitive Alternations in Russian

Ditransitive verbs in some languages enter into dative/locative alternation, whereby a ditransitive verb can take either two DPs or a DP and a PP as its arguments. The former is known as Double Object Construction (DOC) and the latter is often referred to as *to*-dative. The two patterns are illustrated in (1) and (2) for English and Dutch, respectively.

- (1) a. I gave a book to Mary.
b. I gave Mary a book.
- (2) a. Ik geef een boek aan Marie.
1SG give.PRS. ART book to Mary
b. Ik geef Marie een boek.
1SG give.PRS. Mary ART book

Russian lacks *to*-dative construction (*a* variants in (1-2)) and possesses only DOC.

- (3) a. Oljga poslala mame pisjmo.
Olga.NOM send.PST mother.DAT letter.ACC
'Olga sent her mother a letter'

¹ In this paper I am using *Goal* as a neutral cover term for various thematic roles corresponding to an indirect object, i.e. Recipient, Malefactive, Benefactive, Experiencer.

- b. * Oljga poslala k mame pisjmo.
 Olga.NOM send.PST PREP mother.DAT letter.ACC
 ‘Olga sent a letter to her mother.’

It has been shown for English (Pinker 1989; Pesetsky 1995, Krifka 2000) that the alternation between the DOC and *to*-datives is restricted to specific semantic classes of verbs. This is illustrated in (4).

- (4) a. John told us a joke.
 b. John told a joke to us.
 a’. *John whispered me his password.
 b’. John whispered his password to me.

Verbs like *tell, throw, send, bring, serve, promise, ask*, etc., i.e. those that denote ‘instantaneous ballistic motion’ (Pesetsky 1995: 136), can enter into the alternation. On the other hand, verbs denoting ‘continuous causation of accompanied motion’ (Pesetsky 1995: 136), including *push, drag, lift, whisper, present, entrust*, do not allow for DOC.

In Russian no such restrictions seem to exist, and virtually any verb that can take a Theme and a Goal argument can surface in the form of DOC².

- (5) On prošeptal mne slova ljubvi.
 he.NOM whisper.PST me.DAT words.ACC love.GEN
 ‘He whispered the words of love to me.’

This raises the question of whether Russian has a silent preposition akin to English *to*. If the answer is positive, the lack of alternation may be only apparent.

Pereltsvaig (fc.) argues that Russian ditransitive structures should be analyzed as DOCs. The arguments in support of this view are presented below.

The first piece of evidence comes from the fact that in sentences with a DOC, as apposed to *to*-datives, a possession relation should be construed

² A note of precaution is in order. It is erroneous to conclude that Russian lacks PP arguments with ditransitives altogether. They are certainly possible as shown in (i). However a PP in this case can only be a Location or Path. Russian does not have direct counterparts of English and Dutch examples (1-2) in the text.

- (i) Ya poslala pisjmo v Pariž.
 I.NOM sent letter.ACC to Paris.LOC
 ‘I sent a letter to Paris.’

(Krifka 2000). As the contrast between (6a) and (6b) indicates, the construal of possession seems to be crucial for Russian dative-accusative sequences as well.

- (6) a. Ja kupila mužu podarok.
I.NOM buy.PST husband.DAT present.ACC
'I bought my husband a present.'
- b. * Ja kupila spaljne novyj garnitur.
I.NOM buy.PST bedroom.DAT new suite.ACC
'I bought a new suite for my bedroom.'
- c. Ja kupila novyj garnitur v spaljnyu.
I.NOM buy.PST new suite.ACC to bedroom.LOC
'I bought a new suite into my bedroom.'

(6b) is ungrammatical with dative on the Goal since the bedroom can hardly be said to possess the suite. It is possible to make the sentence grammatical by using a PP instead (6c), thus explicitly marking the argument as Location rather than Recipient.

Secondly, Russian ditransitive constructions comply with, the so-called, Oerhle's Observation. Oerhle (1976) was the first to note that only DOC in English allows for causative non-agentive interpretation of the external argument. This condition is particularly obvious in contexts where the external argument can only be a Causer but not an Agent, such as with an inanimate subject (7).

- (7) a. This incident showed us his true intentions.
a'. * This incident showed his true intentions to us.
b. The new affair brought him some inspiration.
b'. * The new affair brought some inspiration to him.

Reverting to the Russian data, it is interesting to note that non-agentive readings are generally available with ditransitives taking a dative and an accusative argument, as illustrated in (8-9).

- (8) On podaril mne prekrasnyh detej.
he.NOM give.PST me.DAT beautiful.ACC children.ACC
'I have beautiful children thanks to him.'
- (9) Eta kniga obespečit tebe bezbednuyu žiznj.
this book.NOM provide.FUT you.DAT well.off.ACC life.ACC
'This book will ensure a good living for you.'

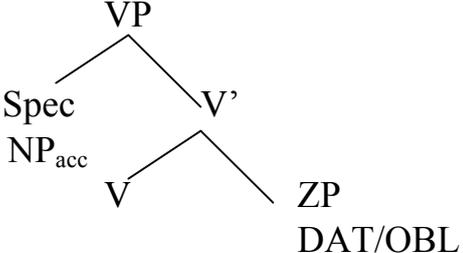
Finally, the inventory of denominal verbs in Russian was claimed to correlate with the inexistence of a silent preposition of the *to*-type in Russian ditransitive constructions (Babyonyshev 1999).³ Hale and Keyser (1993) propose that certain verbs, known as denominal, are formed by incorporating a silent preposition of the relevant type into the noun. Verbs like *to shelve*, *to bottle*, *to archive*, i.e. location verbs, are formed by incorporating a silent locational preposition into the corresponding noun. On the other hand, verbs of the change-of-state, such as *to saddle*, *to butter*, *to flour*, are periphrasable as *to provide with something* and result from merging a noun with a preposition akin to possessive *with*. Babyonyshev (1999) notes that Russian totally lacks verbs of the *shelve*-type, but is rather productive with verbs of the *saddle*-type.

- (10) a. maslitj (to oil/butter)
 štukaturitj (to plaster)
- b. * butylitj (to bottle)
 * krovavitj (to bed)

Based on Hale and Keyser's theory of lexical relation structure and the data under (10), Babyonyshev concludes that there is no abstract preposition of 'terminal coincidence' (*in(to)*) in the lexical inventory of Russian. This implies that ditransitive constructions with dative-accusative argument sequences are true DOC.

3 The structure of Russian transitive VP: previous account.

To the best of my knowledge, not much has been written on the internal structure of the VP in Russian. The major contribution in this respect is Bailyn (1995). He argues that the argument marked accusative is generated higher than the one marked dative. The structure he proposes is illustrated in (11).

- (11)  [Bailyn 1995: 9]

³ Although the correlation might not be universal, it seems to hold in Russian (Pereltsvaig *fc.*).

The arguments he provides in favor of his analysis stem from the direct-indirect object asymmetries, which can be subdivided into two types. One type includes asymmetries related to case alternation. Particularly, Genitive of Negation (GenNeg) is possible with the direct but not with the indirect object, as illustrated in (12).

- (12) a. Ja ne daju det-yam konfet-y/-Ø.
 I.NOM NEG give.PRS kids-DAT sweets-ACC/-GEN
 ‘I don’t give (any) sweets to kids.’
- b. Ja ne daju det-yam/*-ej konfety.
 I.NOM NEG give.PRS kids-DAT/-GEN sweets.ACC
 ‘I don’t give sweets to (any) kids.’

Based on the assumption that SpecVP is the position of structural case assignment and taking into account the well-known observation that GenNeg in Russian applies only to DPs bearing structural case⁴ (Freidin and Sprouse 1991), Bailyn explains the facts described above by stating that GenNeg is restricted to arguments originating in SpecVP.

The same explanation is given to another case-related phenomenon, namely distributive *po*-alternations. Similarly to GenNeg, distributive *po*-phrases, which consist of a preposition *po* and a DP to which it assigns dative, can only replace an argument marked with a structural case, i.e. accusative or nominative.

- (13) a. Vospitatelj razdal detyam
 kindergartener.NOM give.PST children.DAT

 po konfete.
 DIST sweet.DAT
 ‘The kindergartener gave the children a sweet each.’
- b. * Vospitatelj razdal po rebenku
 kindergartener.NOM give.PST DIST child.DAT

 konfety.
 sweets.ACC
 ‘The kindergartener gave each of the children sweets.’

⁴ GenNeg is also possible with nominative arguments of unaccusative verbs.

- (14) V kazhdoj komnate viselo po ljustre.
 PREP every.LOC room.LOC hang.PST DIST lamp.DAT
 ‘A lamp was hanging in every room.’

Since *po*-alternation is often treated as a test for unaccusativity in Russian (Pesetsky 1982), analyzing *po* as being structurally restricted to SpecVP seems a desirable conclusion.

Another type of accusative-dative asymmetries is manifested in binding and control environments. With respect to binding, Bailyn notes that an accusative DP can bind a non-subject-oriented anaphor within a dative DP, while the reverse does not hold.

- (15) a. Marina predstavila [svoih druzej]_i
 Marina.NOM introduce.PST self friends.ACC
 drug drugu_i.
 each other.DAT
 ‘Marina introduced her friends to each other.’
- b. *Marina predstavila drug druga_i
 Marina.NOM introduce.PST each other.ACC
 [svoim druzjam]_i.
 self friends.DAT
 ‘Marina introduced each other to her friends.’

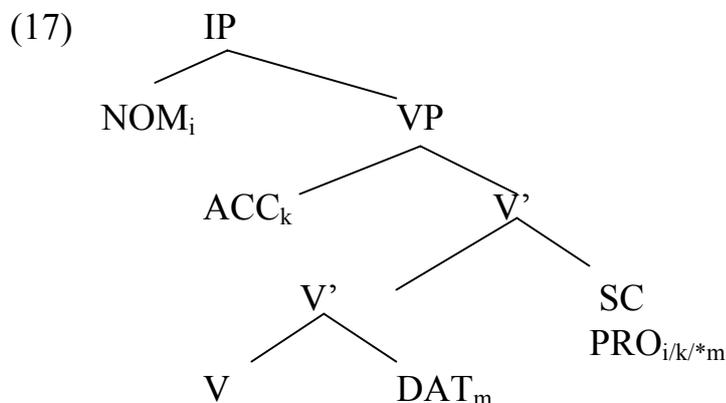
The data in (15), according to Bailyn, can be accounted for if anaphoric binding requires c-command between the antecedent and its anaphor and if accusative DP is assumed to c-command dative in its base position.

Finally, it is shown that an accusative but not a dative argument can control PRO subject of Instrumental Small Clauses. As shown in (16), a nominative subject is equally acceptable as a PRO controller. The control property is explained along the same lines as binding facts. Particularly, the author assumes that a small clause in (16) is an adjunction to V', which gives the sentence in (16) the representation shown in (17). Provided the c-command theory of control, the ungrammaticality of the *m* coindexing in (16) follows from the failure of the dative argument to c-command PRO, as shown in (17).

- (16) Maria_i predstavila svoju podругu_k mame_m
 Maria.NOM introduce.PST self friend.ACC mother.DAT

pyanoj_{i/k/*m}.
drunk.INST

‘Maria introduced her friend to her mother drunk.’



To sum up, on the basis of c-command and case alternation asymmetries between an accusative and a dative argument, Bailyn (1995) concludes that the latter is hierarchically lower than the former.

In the following section, I will challenge the facts presented above and point out some problems arising from the outlined analysis.

4 Some challenges for Bailyn’s (1995) analysis

The first skepticism with respect to the analysis presented above concerns the semantic composition of ditransitive verbs, as implied in the model. Semantically verbs are unsaturated functions that need to become ‘saturated’. The saturation is implemented by combining the function with its arguments, which are names or expressions with the distribution of a name (Heim and Kratzer 1998). There is a certain asymmetry as to the role and the way in which different arguments are combined with a verb. This is reflected in the external versus internal argument bifurcation. Only the internal argument is considered a true argument of the verb, while an external one is added to further expand the event. It has been proposed that subjects are introduced by a functional head, rather than by the lexical verb itself (Marantz 1984; Kratzer 1996). Similarly, the indirect object was argued to be a non-core argument of the verb (Marantz 1993; Pylkkanen 2002). I will follow these ideas and assume that the direct object is more tightly linked to the lexical verb than subject or indirect object.⁵

One of the arguments Marantz (1984) provides in favor of the idea concerning differential status of arguments relates to idiom formation. He notes that this process is structurally restricted because it is possible to form verb-

⁵ In what follows, I will mainly refer to arguments by their thematic roles.

object idioms or subject-verb-object idioms, while idioms consisting of the subject and the verb with a variable object are hardly ever possible. Marantz explains this asymmetry by restricting the domain of idiomatic meaning to lexical VP, to which subjects are assumed not to belong. Going back to the structure of Russian VPs, it is noteworthy that idioms in Russian tend to correspond to V-Theme, V-Location/Path, V-Theme-Location/Path templates.

- (18) a. Vstavlyatj palki v kolesa.
 put.INF sticks.ACC PREP wheels.ACC
 ‘To put a spoke in somebody’s wheel = to impede’
- b. Metatj biser pered svinjami.
 cast.INF beads.ACC PREP swines.INST
 ‘To cast pearls before swines.’

My survey of Russian idioms compiled by Shansky (1975) revealed that out of 400 idioms only 6 contained a dative DP. Only 1 of those 6 idioms can plausibly be analyzed as containing dative within a DOC (19).

- (19) ne nahoditj sebe mesta
 NEG find.INF self.DAT place.GEN
 ‘to worry’

Note that in (19) the idiom includes both a dative Goal and genitive Theme. Moreover, idioms can be used in DOC as long as the Goal argument is outside the idiomatic meaning. Thus (18a) can be used with a freely varying Goal, as in (20).

- (20) On večno vstavlyaet nam palki
 he.NOM always puts us.DAT sticks.ACC
 v kolesa.
 into wheels.ACC
 ‘He always impedes us.’

However, I could not find an idiom where the Goal forms an idiomatic unit with the verb to the exclusion of the Theme. Thus, dative Goals are systematically outside the domain of the idiomatic unit. Following Marantz (1984), I take this as evidence that a Goal argument is projected outside the lexical VP in Russian.

If the proposal concerning the external nature of Goal is on the right track, the structure in (11) turns out to be problematic.

Another challenge for the representation in (11) relates to information structure in DOC. Russian word order is constrained by discourse factors, whereby right peripheral constituents usually represent focused information, while topical elements tend to move leftward. There is a correlation between focus and stress, on the one hand, and depth of embedding and stress, on the other (Cinque 1993; Neelman and Reinhart 1998). Particularly, in accordance with the Nuclear Stress Rule (NSR) (Cinque 1993) the main sentential stress falls on the most deeply embedded constituent. NSR can be obviated by applying additional operations, such as distressing and/or stress strengthening. However, in the latter case the focus projection is blocked (Neelman and Reinhart 1998). With this in mind, consider (21), where the main sentential stress is indicated by bold type.

- (21) a. Nastya kupila Sergeyu **mašinu.**
 Nastya.NOM buy.PST Sergey.DAT car.ACC
 ‘Nastya bought Sergey a car.’
- b. Nastya kupila mašinu **Sergeyu.**
 Nastya.NOM buy.PST car.ACC Sergey.DAT
 ‘Nastya bought a/the car for Sergey.’

Interestingly, the sentence in (21a) can have either a narrow focus on the Theme, or a wide sentence focus. (21b), on the other hand, can only have narrow focus on the Goal argument and the Theme tends to be interpreted as given information. Notice that in accordance with NSR and the representation in (11) the reverse situation is expected to hold since Goal turns out to be the most deeply embedded constituent in that type of structure. This makes me conclude that the order in (21b), which structurally corresponds to (11), is better analyzed as being derived from (21a) by application of scrambling to ensure distressing of the most deeply embedded constituent. This implies that the basic order of arguments in Russian is Goal > Theme rather than the opposite.

Finally, the order Theme > Goal proposed by Bailyn (1995) is incompatible with the facts from topicalization. Topicalization is assumed to target only constituents. It is traditionally recognized that a lexical verb forms a constituent with its complement but not with its specifier. On the basis of the structure in (11) the prediction is that it should be easier to topicalize a verb together with its Goal argument rather than with its Theme. The prediction is not borne out, as evidenced by (22).

- (22) a. [Čitatj skazki] roditeli detyam očenj ljubyat.
 read.INF tales.ACC parents.NOM kids.DAT very like.PRS
- b. ??/* [Čitatj detyam] roditeli skazi očenj ljubyat.
 read.INF kids.DAT parents.NOM tales.ACC very like.PRS
- c. [Čitatj detyam skazki] roditeli očenj ljubyat.
 read.INF kids.DAT tales.ACC parents.NOM very like.PRS
 ‘Parents like to read tales to their kids very much.’

As shown in (22), topicalization can apply either to the entire V-DAT-ACC sequence (22c), or else the movement can target the verb and the Theme (22a). Extracting the verb with the Goal results in ungrammaticality (22b), which I attribute to the fact that the verb does not form a constituent with the Goal to the exclusion of the Theme.

Going back to the asymmetries described in section 2, it is not self-evident that they motivate the structure represented in (11). The fact that some arguments can enter into the described case alternations while others cannot does not necessarily imply any c-command asymmetry between the two. In other words, it is not clear how the ability of a Theme to enter the case alternations can argue for its structurally higher position with respect to the Goal. Nominative Agents pattern with dative Goals in not allowing GenNeg or distributive *po*. This fact leads me to the conclusion that the alternation must be constrained purely semantically (i.e. only Theme) rather than structurally (i.e. only DP in SpecVP).

Some problems also arise with respect to the argument from binding. Example (15) repeated here as (23) was given to illustrate that an accusative DP can bind an anaphor within a dative DP but not vice versa.

- (23) a. Marina predstavila [svoih družej]_i
 Marina.NOM introduce.PST self friends.ACC
- drug drugu_i.
 each other.DAT
 ‘Marina introduced her friends to each other.’

- b. *Marina predstavila drug druga_i
 Marina.NOM introduce.PST each other.ACC
- [svoim družjam]_i.
 self friends.DAT
 ‘*Marina introduced each other to her friends.’

Interestingly, inverting the order of arguments in (23b), such that the dative precedes the reciprocal in accusative renders the sentence fully acceptable.

- (24) Marina predstavila [svoim družjam]_i
 Marina.NOM introduce.PST self friends.DAT
- drug druga_i
 each other.ACC
 ‘Marina introduced her friends to each other.’

Bailyn marks his example similar to (24) with a question mark and attributes its (marginal) grammaticality to A-scrambling of the dative across the accusative. At the same time, he provides an example like (25), a scrambled version of (23a), which he judges to be much better than (24). The alleged grammaticality of (25) is assumed to be the result of A'-scrambling of dative across the accusative with reconstruction of the latter to its base position at LF.

- (25) (??)Marina predstavila drug drugu_i [svoih družej]_i.
 Marina.NOM introduce.PST each other.DAT self friends.ACC
 ‘Marina introduced her friends to each other.’

First of all, it should be mentioned that according to my own native-speaker judgments there is no clear contrast in acceptability between (23b) and (25). Rather there is a contrast between (23a) and (24) as compared to (25) and (23b) respectively. The contrast is even more obvious with a verb like *show*, which does not inherently imply reciprocity.

- (26) a. Ona pokazala partneram_i drug druga_i.
 she.NOM showed partners.DAT each other.ACC
 ‘She showed the partners each other.’
- b. Ona pokazala partnerov_i drug drugu_i.
 she.NOM showed partners.ACC each other.DAT
 ‘She showed the partners to each other.’

a'. ?? Ona pokazala drug drugu_i partneram_i.
 she.NOM showed each other.ACC partners.DAT
 'She showed each other to the partners.'

b'. ?? Ona pokazala drug drugu_i partnerov_i.
 she.NOM showed each other.DAT partners.ACC
 'She showed each other the partners.'

Therefore it seems that all instances of scrambling in the Russian middle field are instances of A-type movement, which changes binding relations. This is further supported by the data on variable binding given in (27).

(27) a. Ya otdala [každyu studentu]_i ego_i rabotu.
 I.NOM gave every author.DAT his work.ACC
 'I gave every student his work (e.g. exam paper) back.'

b. Ya otdala [každyu rabotu]_i ejo_i avtoru.⁶
 I.NOM gave every work.ACC her author.ACC
 'I gave every work (paper) to its author.'

a'. ?? Ya otdala ego_i rabotu [každyu studentu]_i.
 I.NOM gave his article.ACC every student.DAT
 'I gave back his article to every student.'

b'. ?? Ya otdala ejo_i avtoru [každyu rabotu]_i.
 I.NOM gave her author.DAT every work.ACC
 'I gave every article to its author.'

Similarly to (26), (27a) and (27b) contrast with (27a') and (27b') respectively and show that binding relations are established after the clause internal scrambling has taken place. In fact, Bailyn himself argues for A-nature of clause internal scrambling in Russian in his more recent works (Bailyn 2003, 2004). If that is the case, binding does not seem to make a reliable test for determining the underlying c-command relations between the arguments under consideration.⁷

⁶ The noun *rabota* is of feminine gender in Russian, hence the change in gender of the possessive pronoun.

⁷ Interestingly, there are some data that provide support to the idea that a dative Goal must be generated higher than an accusative Theme.

(i) a. Čistaya slučajnostj podarila nam_i drug drugu_i.
 mere chance.NOM present.PST us.DAT each other.ACC

Finally, let us review the control facts. Remember that it is an accusative or a nominative DP that can control PRO in Instrumental Small Clauses, but not dative. The explanation of this fact given in Bailyn (1995) implies that control into adjunct Small Clauses from dative argument position should be generally impossible (see section 2). However this is not true, as evidenced by the examples in (28), which illustrate control into the purpose infinitival clauses.

- (28) a. Muž kupil mne_i brillianty
 husband.NOM buy.PST me.DAT diamonds.ACC
 (čtoby) PRO_i nadetj zavtra na banket.
 COMP put.on.INF tomorrow PREP reception
 ‘My husband bought me diamonds to have on for the reception tomorrow.’
- b. Ona prinesla mne_i raboty PRO_i proveritj.
 she.NOM bring.PST me.DAT papers.ACC check.INF
 ‘She brought me the papers to check/grade.’

Moreover, if only depictive clauses are taken into consideration, the ban on control by datives is not absolute. Depictive secondary predicates in Russian come in two types, depending on the case marking on the adjective. The depictive predicate can surface in the Instrumental case, as in (17) repeated in (29) or in the same case as the controller of the predicate, shown in (30).

-
- b. (??) Čistaya sluchajnostj podarila nas_i drug drugu_i.
 mere chance.NOM present.PST us.ACC each other.DAT
 ‘A mere chance let us have each other.’
- (ii) Context: Dorothy was in deep depression for a long time until she met Dr. Fitz, who managed to bring her back to normal. After some time, happy Dorothy exclaimed:
- a. V nekotom smysle on vernul mne samu sebya
 in certain sense he.NOM return.PST me.DAT own self.ACC
- b. ??/* On vernul menya sebe samoj.
 he.NOM return.PST me.ACC own self.DAT
 ‘He brought me myself back.’

In the above examples, scrambling of the anaphor across its antecedent renders all of them ungrammatical.

- (29) Maria_i predstavila svoju podругu_k mame_m
 Maria.NOM introduce.PST self friend.ACC mother.DAT

pyanoj_{i/k/*m}.
 drunk.INST

‘Maria introduced her friend to her mother drunk.’

- (30) Ona_k rasskazala nam_i etu novostj i bez togo
 she.NOM tell.PST us.DAT this news.ACC PRT PREP DEM

rasstroennym_{i/*k}.
 upset.DAT.1PL

‘She told us this news while we were already upset enough.’

The contrast between (29) and (30) indicates that even though dative arguments are illicit controllers for Instrumental clauses, they have no problem to control into agreeing clauses or purpose clauses. Thus, whatever the reason for ungrammatical coindexation in (29) is, it must not necessarily be the lack of c-command between the adjunct Small Clause and the dative. Rather the fact invites a closer investigation into the syntax and semantics of depictive Small Clauses in Russian, an issue that I leave for future research.⁸

In the following section I outline an alternative approach to DOC which is largely built on the idea of VP-shells (Larson 1988).

5 Applicative analysis of Russian ditransitives

After having discussed the challenges faced by Bailyn’s analysis of indirect objects in Russian, I am going to propose an alternative and assume that the underlying order of verb arguments is Goal > Theme in Russian, as it has been proposed for some other languages (Larson 1988, Johnson 1991, Bowers 1993, among others). In implementing this idea, I am going to follow the assumption that the Goal is introduced by a functional head (Marantz 1993; Pytkkanen 2002; McIntyre 2006), and in this sense it is external to the lexical VP. In the spirit of the previous research, I call this head V_{APPL}.

The analysis for Russian is heavily based on the ideas by Pytkkanen (2002) and McIntyre (2006), and I start out by outlining their respective proposals. Pytkkanen’s (2002) analysis is framed within the theory of argument structure as developed by Marantz (1984, 1993) and Kratzer (1996), among

⁸ For some analyses of Russian depictive Small Clauses see Bailyn (2001), Richardson (2001), and Grebenyova (2005), among others.

many others, within which differences in semantics are directly represented in syntax. With respect to indirect objects, Pylkkanen proposes that they are introduced by an Applicative Head. Semantically this head can encode either a relation between an individual and an event, or between two individuals. In the latter case the Applicative Head is low in the structure, below the lexical verb, while in the former it is merged above the verb and is thus high. Irrespective of the type of the Applicative Head (low or high) the indirect object is introduced in the specifier position of this functional projection. The following three diagnostics are proposed to differentiate low (entity taking) from high (event taking) applicatives: (i) only high applicatives are able to combine with unergative verbs; (ii) only high applicatives can combine with static verbs like *hold*, since their semantics does not presuppose obligatory transfer of possession; (iii) only high applicatives can combine with depictive secondary predicates.

McIntyre (2006) builds on Pylkkanen's idea about two types of applicatives. However, he rejects her analysis of German and English as possessing only low V_{APPL} . McIntyre gives the following semantic typology of different uses of the Applicative head (his V_{DAT}): (i) when used with an entity complement (low applicative) it expresses such relations as alienable and relational possession (*have, get*) and transfer of possession (*give, send, sell*); (ii) when taking an eventive complement (high applicative) it expresses locational, experiencer, and causative reading. The author introduces another test for differentiating between event and entity-related applicatives. Namely, restitutive operators like German *wieder* (again/back) when combined with a ditransitive verb yield the interpretation of "restoration of the resultant state" (McIntyre 2006: 198), if the entity-selecting V_{APPL} is involved in the derivation. This is illustrated in (31), which describes the situation where the same book goes back to its original owner.

- (31) Er hat einem Freund ein Buch wieder geschickt/verkauft.
 he AUX ART friend ART book again sent/sold
 'He sent/sold his friend a book back.' [= (27) from McIntyre 2006: 199]

Following the mentioned proposals, I assume that V_{APPL} is a semantically contentful light verb with the meaning represented in (32).

- (32) HAVE (x spec, y compl) asserts of x that it stands in a possession relationship to y.

Possession in (32) should be understood as an abstract notion including possession over things as well as possession of some experience or state of

mind. The immediate consequence of such an approach is that V_{APPL} introduces Possessors as well as Benefactors, Malefactors, and Experiencers.

I am furthermore pursuing the idea that V_{APPL} can select either for an entity or an event, with the proviso that the Goal in Russian DOC is always introduced by an event-selecting head. This assumption is based on the results of the tests proposed by Pylkkanen (2002) and McIntyre (2006), once they are applied to Russian.

(i) Not all, but some unergative verbs can be applicativized in Russian⁹.

(33) Ya budu vam petj i tantzevatj.
I.NOM FUT you.DAT sing.INF CONN dance.INF
'I will sing and dance for you.'

(ii) Static verbs of the *hold*-type can combine with an applied argument.

(34) (in a situation where two people are hanging a book shelf onto the wall.)
Ne otvlekaj ego. On deržit mne polku
NEG disturb.IMP him.ACC he.NOM hold.PRS me.DAT shelf.ACC
'Don't disturb him. He is holding a shelf for me.'

(35) Ty sidišj mne na platje.
you.NOM sit.PRS me.DAT PREP dress.LOC
'You are sitting on my dress.'

(iii) Control is possible into *agreeing* depictive small clauses.

(36) Ona izlagala nam_i svoj plan uže
she.NOM state.PST us.DAT self plan.ACC already

izryadno vypimšim_i.
quite tipsy.DAT
'She told us her plan while we were already quite tipsy.'

⁹ As noted by Soschen (2005), in child Russian a wider range of unergatives undergoes applicativization:

(i) Ya ne tebe plaču, ya mame plaču.
I.NOMNEG you.DAT cry.PRS I.NOMmum.DAT cry.PRS
'I'm not crying for you, I'm crying for my Mum.'

[Soschen 2005: 2 (footnote)]

(iv) Introduction of an operator *vnovj/snova* (again) does not necessarily give restitutive reading. Thus the sentence in (37) can mean that in spite of my pleas not to send me books anymore, they sent me another book. The operator then refers to the repetition of the event itself.¹⁰

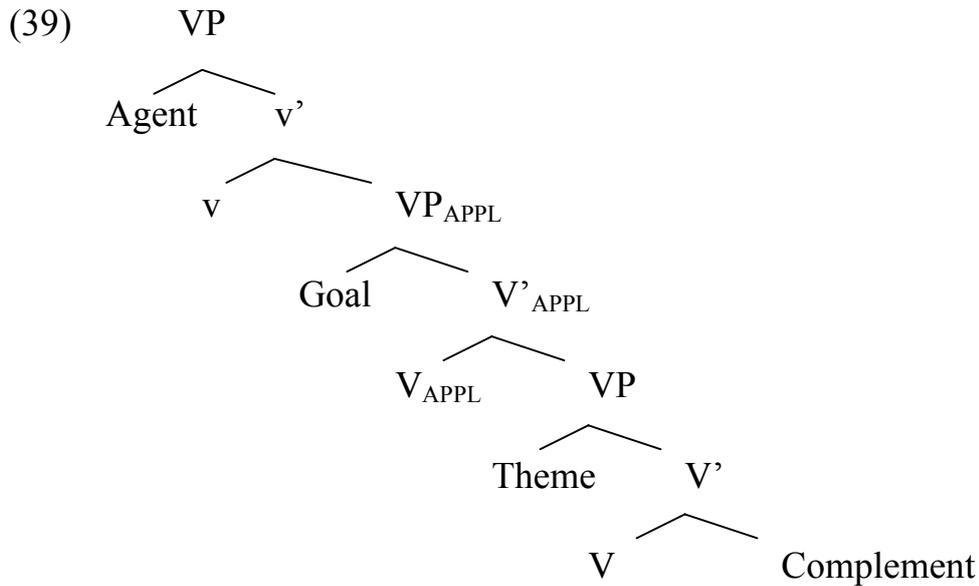
(37) Oni vnovj/snova poslali mne knigu.
 they.NOM again send.PST me.DAT book.ACC
 ‘They sent me a book again.’ or
 ‘They re-sent me the book.’

As shown in (i)-(iii), V_{APPL} in Russian patterns with high applicatives in Pylkkanen’s terms as it can be combined with (some) unergative verbs (i), stative verbs (ii) and DAT can control into a depictive small clause, albeit of agreeing type. Moreover, ditransitive sentences do not solely express possessive/privative relations between a Goal and a Theme. This is evident in examples like (38), where the referent of the Goal benefits from the situation, but can hardly be said to possess the Theme.

(38) On vklyučil nam svet.
 he.NOM switch.on.PST us.DAT light.ACC
 ‘He switched on the light for us.’

The structure to be advocated in the present paper for Russian DOC is represented in (39), where the Theme, is generated in the Spec of VP and is c-commanded by the Goal, introduced by V_{APPL} . The Complement position is restricted to other oblique arguments, locative/directional PPs, clausal complements, etc.

¹⁰ A reviewer notes that (37) might not be very illustrative since bare nouns in Russian are non-specific indefinites by default, which facilitates the event-repetition reading. However, the non-specific reading is not the only possible one, as indicated by the translation of (37). Imagine the situation in which there was a complete misunderstanding with some book club, which keeps on sending me one and the same book as if I ordered it. I, on my part, keep on sending it back with explanations. But the idiots seem to ignore my messages. In such a context, the book is not just specific but it is also definite. Bare nouns in Russian are ambiguous between definites and indefinites, and if it is true that low entity-related V_{APPL} induces restoration-of-the-resultant state reading (which implies definite/specific interpretation of DP), one can expect that the presence of the low V_{APPL} should enforce the definite reading in (37) and thus disambiguate the interpretation. However, it is obviously not happening in DOC in Russian. This, to my mind, can be an indication that either Russian V_{APPL} is not entity-related, as follows from the test, or else the test is not very reliable.



With respect to syntactic properties of V_{APPL} , I am assuming, following McIntyre (2006) and Lee-Schoenfeld (2006), that it assigns inherent dative to its specifier. Inherent here is to be understood as invariant in its form, i.e. dative, irrespective of the syntactic environments and contingent on the thematic role. The invariance is illustrated in (40).

- (40) a. On razoslal učastnikam brošury.
 he.NOM send.PST.MASC.SG participants.DAT booklets.ACC
 ‘He sent the participants the booklets.’
- b. * Učastniki byli razoslany brošury.
 participants.NOM AUX send.PTC booklets.ACC
 ‘The participants were sent the booklets.’
- c. Brošury byli razoslany učastnikam.
 booklets.NOM AUX send.PTC participants.DAT
 ‘*The booklets were sent the participants.’
- d. Učastnikam razoslali brošury.
 participants.DAT send.PST.PL booklets.ACC
 ‘The participants were sent the booklets.’

The possibility to passivize an indirect object in English DOC has often been taken as evidence that the object is assigned a structural case. (40b) illustrates that dative arguments in Russian cannot undergo passivization and be

transformed into nominative. The nearest equivalent of the English translation of (40b) is, the so-called, impersonal passive (40d), where dative is preserved and the verb agreement is set to default plural. The more accurate English translation would be something like *they sent the participants the booklets*, with arbitrary Agent interpretation. Moreover note the contrast between the grammatical Russian sentence in (40c) and its ungrammatical English counterpart given in the translation.

The facts described above follow if we allow V_{APPL} to assign idiosyncratic case. Under such an assumption, no intervention effects are expected to arise in (40c). Even though Goal is closer to SpecTP, its case feature is checked against V_{APPL} and is thus inactivated for the purposes of further case checking or agreement.¹¹

To summarize, I have proposed that Russian Goals are introduced by a functional head V_{APPL} that c-commands the lexical VP, where Themes are generated. The proposed analysis is in line with small-clause analyses of DOC (Bowers 1993, Johnson 1991, among others), which acknowledge the existence of possession relation between the two objects. With respect to syntactic properties of V_{APPL} , I have proposed that it checks off dative case on the argument it introduces. I have also argued that V_{APPL} in Russian DOC always selects for an eventive complement.

In the next section, I propose to extend the analysis given for DOC to other constructions in Russian. In particular, I envisage the way to apply it to possessive sentences. The ideas put forth are tentative and require further investigation.

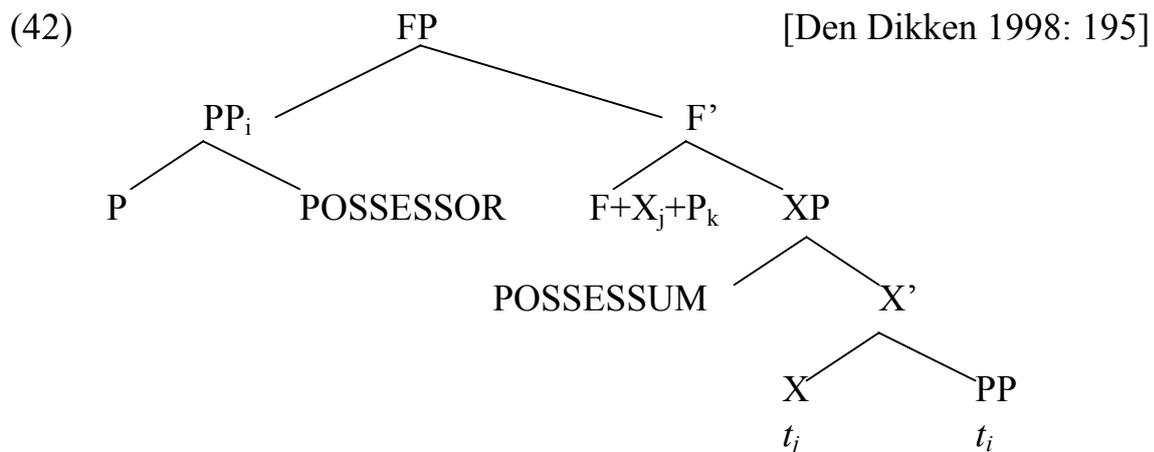
6 Extension of the proposed analysis

Provided the semantics of DOC, i.e. the presence of possession component, there are attempts to link the analysis of DOC to *have*-type possessive sentences. (Chvany 1975, Kayne 1994, Den Dikken 1998, Soschen 2005, among others). For instance, Den Dikken (1998) proposes that both (41a) and (42b) are derived from the same underlying structure represented in (41c).

- (41) a. He gave Mary a flower.
 b. Mary has a flower.
 c. [_{SC} POSSESSUM [_{PP} P_{Dat} POSSESSOR]]

¹¹ Agreement is strictly contingent on NOM case in Russian, such that if there is a DP marked NOM it will obligatorily enter into agreement with the finite verb.

Thus both the indirect object in (41a) and the possessor in (41b) start out as predicates of a Small Clause (SC) of which the possessed entity is the subject. In the course of the derivation the predicate inverts with its subject by A-movement. In order to comply with the requirements on movement, namely the Minimal Link Condition, Den Dikken proposes that a series of incorporations takes place: P_{Dat} incorporates into the head of SC, which, in its turn, incorporates into the head of some higher functional projection FP. The derivation of (41b) is given in (42) below.¹²



Den Dikken's analysis captures the fact first pointed out by Benveniste (1966) that *have* is related to the inverted order of the copular *be* and the dative preposition. The empirical motivation for this idea can be found crosslinguistically. For instance, the French examples in (43) illustrate that the English sentence in (41b) can have two possible realizations in this language.

- (43) a. Marie a la fleur.
 Mary have ART flower
 'Mary has the flower.'
- b. La fleur est à Marie.
 ART flower is PREP Mary
 'Mary has the flower.'

Let us now revert to the Russian data. Possession in Russian can be expressed in the following ways: (i) a PP consisting of the preposition *u* and a genitive marked DP plus the copular verb *be* (44a); (ii) a PP plus the verb *have* with the reflexive suffix *-sya* agreeing with the possessum, the so-called anti-causative

¹² XP in the tree in (42) corresponds to SC in (41c).

construction, (44b); (iii) an English-type possessive construction with a possessor in the nominative case agreeing with the verb *have*, and the possessum in accusative¹³.

- (44) a. U menya estj osnovaniya polagatj...
 PREP I.GEN be.3PL reason.PL.NOM think.INF
- b. U menya imejut-sya osnovaniya polagatj...
 PREP I.GEN have.3PL-REFL reason.PL.NOM think.INF
- c. Ya imeju osnovaniya polagatj...
 I.NOM have.1SG reason.PL.ACC think.INF
 ‘I have reasons to think that...’

It is quite obvious that (44a) is similar to the French example in (43b), despite the differences in the word order. And (44c) is reminiscent of French (43a) and English (41b). Therefore it seems natural to treat the data from the three languages in a similar fashion.

In my analysis of the data in (44), I am going to adopt the core of Den Dikken’s proposal sketched above. The analysis has to account for the following facts: (i) the possessive copular in Russian is spelled out either as *be* or as *have*; (ii) irrespective of the way it is spelled out the preposition can be overt (44b), and (iii) the sentences of the pattern illustrated in (44a) can be ambiguous between the possessive and the locative reading. In this paper I propose an explanation for the last two facts, which seem interrelated, leaving the first fact to further study.¹⁴

Remember that in Den Dikken’s analysis, *have* is the spell out of *be* + the dative preposition. If that is true, the sentence in (44b) is surprising since P does not seem to undergo any sort of incorporation and the resultant form is still *have*. According to Den Dikken, the same incorporation of the dative preposition *to* into the SC predicate is supposed to take place in DOC, i.e. (45a) is derived from (45b).

- (45) a. Jack sent me a package.
 b. Jack sent a package to me.

¹³ The presence of the copular *be* is optional in some cases, which depends on the lexico-semantic properties of the possessum and, to a lesser degree, of the possessor. There are also lexico-semantic constraints on the use of different patterns. For the detailed discussion see Chvany (1975).

¹⁴ Chvany (1975) treats (44b) as possessing only the locative reading, however I have reasons to believe that it only has possessive reading.

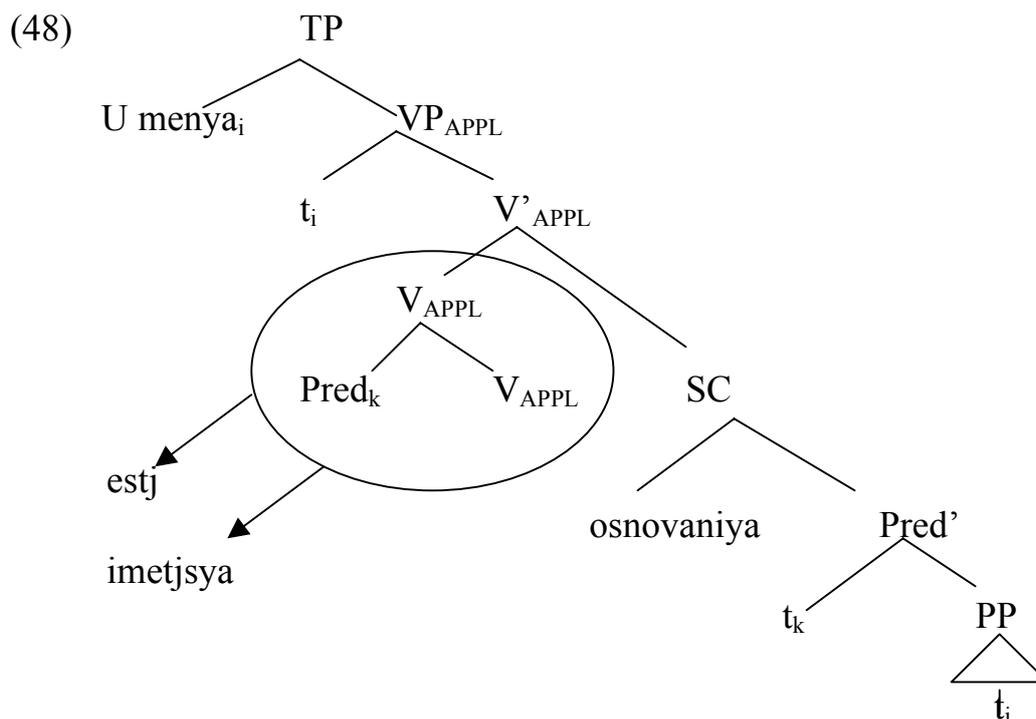
I have shown in section 1 that Russian lacks *to*-dative constructions and any sort of silent *to* in ditransitive clauses. Therefore, I propose that the preposition *u* in Russian possessive constructions is a real locative preposition and that the semantic relation established between the subject and the predicate of the underlying SC is one of location rather than possession. The link between the derivation of possessive *have*-clauses and locative constructions has been previously proposed in the literature (Belvin and Den Dikken 1997). As mentioned above, copular possessive sentences allow for a locative reading, which is clearly perceivable in (46).

- (46) U menya (estj) mnogo ego knig.
 PREP I.GEN (be) many his book.PL.NOM
 ‘I have a lot of his books’ or
 ‘There are a lot of his books at my place.’

Thus, I would like to modify Den Dikken’s (1998) proposal and argue that the possession relation is ensured by the presence of V_{APPL} in the derivation rather than resulting from the predication relation within SC. In the absence of V_{APPL} , the PP gets a pure locative interpretation. Interestingly, the unmarked word order for locative sentences is the reverse of that in the possessive, and the copular element, if present, is often spelled out as *nahoditjsya* (to be situated) rather than *estj*.

- (47) Mnogie ego knigi (nahodyatsya) u menya.
 many.NOM his.NOM books.NOM (are.situated) PREP I.GEN
 ‘Many of his books are at my place.’

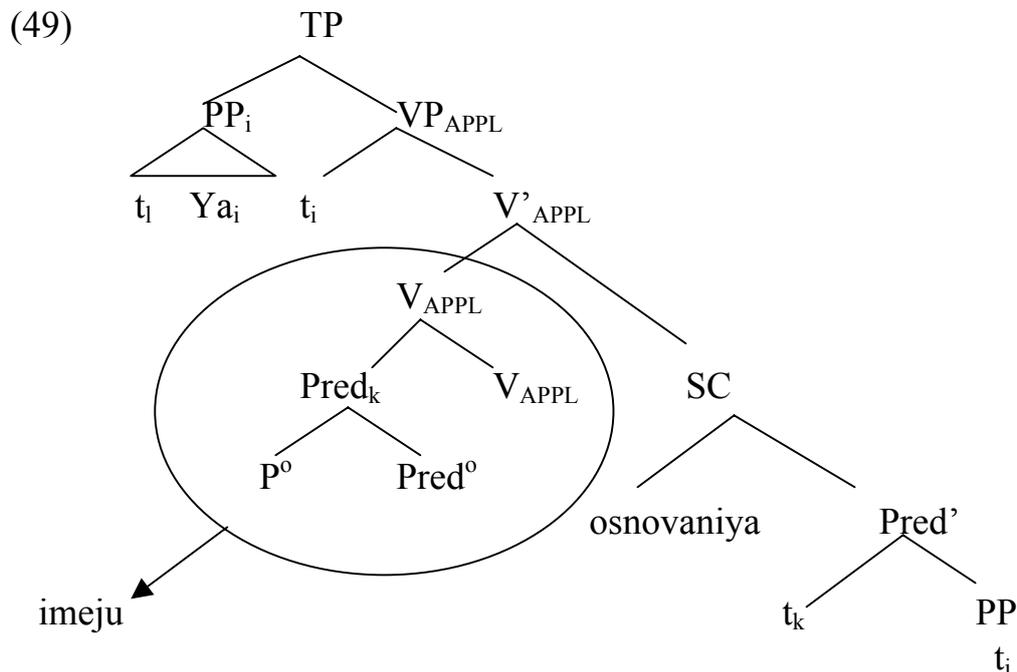
Based on the facts described above, I suggest that a possessive sentence in Russian is derived as shown in (48) for the sentences in (44a-b).



In this derivation the copular is a spell out of the SC head incorporated into V_{APPL} . The head can be spelled out as either anti-causative form of *have* or as *be* copular. As in Den Dikken (1998), this head movement takes place in order to provide the domain extension for the A-movement of PP into the Spec of VP_{APPL} . The A-type of movement of the predicative PP is supported by the fact that PP can move further to the subject position, to SpecTP. As shown previously in the literature (Chvany 1975, Bailyn 2003, 2004), a possessive PP in Russian exhibits most of the subject properties. Note also that the derivation in (48) does not pose any problems with respect to the Minimal Link Condition either: the PP is the closest target for the EPP feature of T. The nominative case on the Possessum as well as phi-features of T are checked via long-distance Agree. The Possessor does not create any intervention effects since it is embedded inside the PP where it is case-marked by P and thus becomes inert for further checking.

If P incorporation is not crucial for deriving *have*-possessives in Russian as argued above, the question is what happens in cases exemplified by (44c), i.e. in English type *have*-possessives. In order to unify (44c) with (44a-b), I suggest that the difference in the surface form derives from the morphological properties of the locative P involved. First of all, in (44c) P is null. Secondly, morphologically the P in (44c) is an affix and not a full stem, as in (44 a-b), which triggers its obligatory incorporation into the higher-up head (cf. Baker 1988). And finally, I assume, following Belvin and Den Dikken (1997), that incorporation involves a Case feature of P leaving its complement DP caseless. Once predicate fronting applies, the caseless DP becomes the closest goal for

EPP as well as Case feature of T, which marks it NOM. Thus the derivation proceeds as illustrated in (49).



The proposed analysis raises a number of questions which I briefly mention here, hoping to return to them in future work. First of all, it allows A-movement into the theta position, which even though questionable under traditional Principle and Parameters framework, appears an arguable operation under current minimalist assumptions (Lee-Schoenfeld 2006). Secondly, it remains to be explained what is responsible for the different spell out possibilities of the Pred+V_{APP} complex in (48). This might be a morphological quirk, but the presence of the reflexive morpheme in PP possessives with *have* could be an indication that these sequences involve a more complex derivation than the one depicted in (48). Finally, more study is needed to understand the Case properties of V_{APPL} in possessive constructions. As I argued in section 5, V_{APPL} in DOC_s assigns dative to the argument it introduces. Belvin and Den Dikken (1997) argue that incorporation of Case properties of P into the verbal complex is what ensures the existence of *have*. While it is possible to adopt this idea to account for sentences with *imej* (have), it is not clear how this analysis extends to sentences with *estj* (be). In the latter case, either V_{APPL} has no case-assigning properties, or its Case feature is suppressed as the result of incorporation though the morphological shape of the copular remains unaltered. I leave these issues for future research.

7 Conclusion

In the present paper I investigated the internal structure of the Russian VP with recourse to ditransitive verbs. I proposed that the Theme argument in a ditransitive construction (syntactically ACC direct object) is projected in Spec VP. The dative argument is argued to be introduced by V_{APPL} which is responsible for establishing a HAVE-relation between an XP in the specifier position of VP_{APPL} and the complement of V_{APPL} . Due to the underspecified semantics of HAVE, the applied argument can carry various theta-roles (e.g. Benefactive, Malefactive, Possessor, Experiencer). Following McIntyre (2006), I proposed that if the Applicative head has any case to assign, it should be inherent dative. I opposed my analysis with the previous analysis of Russian DOC (Bailyn 1995) showing that the proposed account is superior in explaining a set of empirical facts.

Finally, I tried to extend the analysis established for Russian DOC to possessive sentences. I proposed that the latter might also involve V_{APPL} in the derivation. Based on the proposals by Den Dikken (1998) and Belven and Den Dikken (1997), I made a first step in working out a unified analysis for different types of copular possessive constructions in Russian.

References

- Babyonyshev, Maria (1999). "Missing" verb classes in Russian. Paper presented at FASL 8, University of Pennsylvania.
- Bailyn, John (1995). Underlying phrase structure and 'Short' verb movement in Russian *Journal of Slavic Linguistics*, 3 (1): 13-58.
- Bailyn, John (2001). The syntax of Slavic predicate case. In: Strigin, A. et. al (eds.). *ZAS Occasional Papers in Linguistics*, Zentrum für allgemeine Sprachwissenschaft, Berlin, 1-26.
- Bailyn, John (2002). Inversion, dislocation and optionality in Russian. In: Zybatov G., U. Junghanns, G. Mehlhorn and L. Szucsich (eds.). *Current Issues in Formal Slavic Linguistics* (FDSL 3). Frankfurt/Main: Peter Lang, 280-293.
- Bailyn, John (2003). A (purely) derivational approach to Russian Scrambling. In: Partee Barbara et al. (eds.). *Formal Approaches to Slavic Linguistics 11*. University of Michigan Press.
- Bailyn, John (2004). Generalized Inversion. *Natural Language and Linguistic Theory* 22: 1-49.
- Baker, Mark (1988). *Incorporation: A theory of grammatical function changing*. Chicago/London: The University of Chicago Press.
- Belvin, Robert and Marcel Den Dikken (1997). *There, happens, to, be, have*. *Lingua* 101: 151-183.

- Benveniste, Emile (1966). *Problèmes de linguistique générale*. Paris: Gallimard.
- Bowers, John. (1993). The syntax of predication. *Linguistic Inquiry* 24 (4): 591-656.
- Cinque, Guglielmo (1993). A null theory of phrase and compound stress. *Linguistic Inquiry* 24: 239-297.
- Chvany, Catherine (1975). *On the syntax of BE-sentences in Russian*. Cambridge, MA: Slavica Publishers.
- Den Dikken, Marcel (1997). The syntax of possession and the verb 'have'. *Lingua* 101: 129-150.
- Den Dikken, Marcel (1998). Predicate inversion in DP. In: Alexiadou, Artemis and Chris Wilder (eds.) *Possessors, Predicates and Movement in the Determiner Phrase*. Amsterdam/Philadelphia: John Benjamins, 177-214.
- Freidin, R. and R. Sprouse (1991). Lexical case phenomena. In: Freidin, R. (ed.) *Principles and Parameters in Comparative Grammar*. Cambridge, MA: MIT Press, 392-416.
- Grebenyova, Lydia (2005). Agreement in Russian secondary predicates. In *Proceedings of the 40th Meeting of the Chicago Linguistic Society (CLS 40)*.
- Hale, Ken and Samuel Jay Keyser (1993). On argument structure and the lexical expression of syntactic relations. In: Hale, Ken and Samuel Jay Keyser (eds.). *The View from Building 20: Essays in Linguistics in Honor of Sylvain Bromberger*. Cambridge, MA: MIT Press, 111-176.
- Heim, Irena and Angelika Kratzer (1998). *Semantics in Generative Grammar*. Oxford: Blackwell.
- Johnson, Kyle (1991). Object positions. *Natural Language and Linguistic Theory* 9: 577-636.
- Kayne, Richard (1994). *The Antisymmetry of Syntax*. Cambridge, MA: MIT Press.
- Kratzer, Angelika (1996). Severing the external argument from its verb. In: Rooryck, Johan and Laurie Zaring (eds.). *Phrase Structure and the Lexicon*. Dordrecht: Kluwer Academic Publishers.
- Krifka, Manfred (2000). Manner in dative alternation. *Proceedings of WCCFL* 18. Somerville, MA: Cascadilla Press.
- Larson, Richard (1988). On the double object construction. *Linguistic Inquiry* 19: 33-91,
- Lee-Schoenfeld, Vera (2006). German possessor datives: raised and affected. *The Journal of Comparative Germanic Linguistics* 9 (2): 101-142.
- Marantz, Alec (1984). *On the Nature of Grammatical Relations*, vol. 10 of *Linguistic Inquiry Monographs*. Cambridge, MA: MIT Press.
- Marantz, Alec (1993). Implications of asymmetries in Double Object Constructions. In: Mchmbo, Sam A. (ed.). *Theoretical Aspects of Bantu Grammar 1*. Stanford: CSLI Publications, 113-150.
- McIntyre, Andrew (2004). *German high datives and morphemes meaning HAVE*. Ms. University of Leipzig.

- McIntyre, Andrew (2006). The Interpretation of German datives and English *have*. In: Hole, Daniel, Andre Meinunger and Werner Abraham (eds.) *Datives and Other Cases*. Amsterdam: Benjamins, 185-211.
- Neelman, Ad and Tanya Reinhart (1998). Scrambling and the PF-interface. In: Butt, Miriam and Wilhelm Geuder (eds.) *The Projection of Arguments: Lexical and Compositional Factors*: Chicago: CSLI Publications, 309-353..
- Oerhle, R. (1976). *The Grammatical Status of the English Dative Alternation*. PhD thesis, MIT, Cambridge, MA.
- Pereltsvaig, Asya (ms.). Syntax of denominal and ditransitive verbs reconsidered.
- Pesetsky, David (1982). *Paths and Categories*. Cambridge, MA: MIT Press.
- Pesetsky, David (1995). *Zero Syntax: Experiencers and Cascades*. Cambridge, MA: MIT Press.
- Pinker, Steven (1989). *Learnability and cognition: The acquisition of argument structure*. Cambridge, MA: MIT Press.
- Pylkkanen, Liina. (2002). *Introducing Arguments*. PhD thesis, MIT, Cambridge, MA.
- Richardson, Kylie (2001). What Secondary Predicates in Russian Tell us about the link between Tense, Aspect and Case. *ZAS Papers in Linguistics* 26.
- Shansky, N. (1975). *700 Russian Idioms and Set Phrases*. Moscow: Russian Language Publishers.
- Soschen, Alona (2005). Derivation by phase: Russian applicatives. Presentation held at the Canadian Linguistics Association Conference, London.

Marina Dyakonova
University of Amsterdam
Spuistraat 210, office 309
e-mail: M.Dyakonova@uva.nl

Parts-of-speech systems and morphological types*

Kees Hengeveld

University of Amsterdam

This paper shows that there are a number of correlations between the parts-of-speech system of a language and the morphological type of that language. It is argued that, from a language-internal perspective, the functional flexibility of lexical items correlates with their formal rigidity, i.e. alternations in the form of a stem do not occur with flexible lexical items. As a consequence, from a cross-linguistic perspective, lexical items that are less likely to be flexible according to the parts-of-speech hierarchy, are also less likely to show formal rigidity, i.e. stem alternation is most likely to occur with verbs, less with nouns, and even less with adjectives.

1 Introduction

Hengeveld, Rijkhoff and Siewierska (2004) show that there are certain correlations between the parts-of-speech system of a language and the word order properties of that language. If a language has a parts-of-speech system that allows lexical elements to be used in more than one propositional function (predication, reference, modification), it resolves the potential functional ambiguity that arises in such a situation by imposing rigid word order patterns. The conclusion that may be drawn from this is that FUNCTIONAL flexibility leads to FORMAL rigidity, i.e. there is a trade-off between lexical and syntactic structure.

This paper investigates whether a similar conclusion may be drawn with respect to the morphological properties of a language, more in particular, the extent to which languages with different parts-of-speech systems allow lexical stems to alternate in form when inflectional categories are attached to them, a crucial property of fusional languages. The prediction is, as in the study mentioned earlier, that intra-linguistically, functionally flexible items will show

* I am indebted to Lachlan Mackenzie, Gerry Wanders, and three anonymous reviewers for comments on an earlier version of this paper.

formal rigidity, i.e. stem alternation is predicted to be absent with lexical items that can be used in more than one propositional function. Inter-linguistically, this means that propositional functions that are most likely to be expressed by non-flexible lexeme classes according to the parts-of-speech hierarchy are at the same time the most likely ones to exhibit variation in the form of the stem.

The conclusion will be that this is indeed the case, which means that stem alternation is not a property of grammars as a whole, but of certain functional domains within grammars. This ties in with recent work by Plank (1998, 1999) and Haig (fc.), who argue against the holistic conception of agglutination and fusion such as defended earlier by, especially, Skalička (1979), who posited a single connection between parts-of-speech system and morphological type. This study shows that there is indeed a connection between agglutination, fusion, and isolation on the one hand, and parts-of-speech system on the other. However, given that the degree of flexibility of stem classes across propositional functions may differ from one language to the other, the prediction is that the extent to which languages may display stem alternation will also differ. As a result, morphological typology cannot be applied to languages as unified systems, but should rather be applied to specific propositional functions within languages.

This paper is organized as follows. In section 2 I present the framework used to classify parts-of-speech systems. Section 3 briefly goes into the parameters involved in morphological typology, and delimits the area of investigation reported on in this paper. The relation between parts-of-speech systems and morphological types is specified in terms of a number of hypotheses in section 4, which are applied to the sample described in section 5, yielding the results provided in section 6. The paper is rounded off in the concluding section 7.

2 Parts-of-speech

2.1 Introduction

For the classification of parts-of-speech systems I base myself on the theory described in Hengeveld, Rijkhoff and Siewierska (2004)¹, itself based on Hengeveld (1992). Hengeveld, Rijkhoff and Siewierska (2004) classify basic and derived lexemes in terms of their distribution across four propositional functions², listed in Figure 1.

¹ For a critical discussion of Hengeveld (1992) see Croft (2000) and Evans and Osada (2005). These criticisms are addressed in Hengeveld and Rijkhoff (2005) and evaluated in detail in van Lier (2006).

² The term ‘propositional function’, taken from Croft (2000), is used here instead of the term ‘syntactic slot’ used in the original formulation.

	<i>head</i>	<i>modifier</i>
<i>predicate phrase</i>	verb	manner adverb
<i>referential phrase</i>	noun	adjective

Figure 1: Lexemes and propositional functions

Figure 1 is based on two parameters, one involving the opposition between predication and reference, the other between heads and modifiers. Together, these two parameters define four propositional functions: head and modifier of a predicate phrase, and head and modifier of a referential phrase.

2.2 Differentiated, flexible and rigid languages

The four propositional functions can be illustrated by means of the English sentence in (1).

- (1) The tall_A girl_N sings_{SV} beautifully_{MAdv}

English can be said to display separate lexeme classes of verbs, nouns, adjectives and manner adverbs, on the basis of the distribution of these classes across the four propositional functions identified in Figure 1. None of the lexemes in (1) could be used directly in another propositional function. Thus, in this example there is a one-to-one relation between propositional function and lexeme class. Languages of this type are called DIFFERENTIATED LANGUAGES.

There are other languages in which there is no such one-to-one relation between the four propositional functions identified and the lexeme classes available. These languages are of two types. In the first type, a single class of lexemes is used in more than one propositional function. The parts-of-speech system of such a language is called FLEXIBLE. In the second type, classes of lexemes for one or more propositional functions are lacking. The parts-of-speech system of such a language is called RIGID. The following examples illustrate the difference between these two types. In Warao (Chibchan-Paezan; Romero-Figeroa 1997: 49, 50, 119) the same lexical item may be used as the head of a referential phrase (2), as a modifier within a referential phrase (3), and as a modifier within a predicate phrase (4):

- (2) **yakera**
beauty
'beauty'

- (3) Hiaka **yakera** auka saba tai nisa-n-a-e.
 garment beauty daughter for she buy-SG-PUNCT-PAST
 ‘She bought a beautiful dress for her daughter.’
- (4) Oko kuana yaota-te arone **yakera** nahoro-te ...
 we hardness work-NPAST although beauty eat-NPAST
 ‘Although we work hard and eat well, ...’

The situation in Garo (Tibeto-Karen; Burling 1961: 27, 33) is rather different. It has classes of nouns and verbs, but not of adjectives and manner adverbs. In order to modify a head noun within a referential phrase, a relative clause has to be formed on the basis of a verbal lexeme, as illustrated in (5) and (6). In (5b), the verb *ca* ‘eat’ is turned into the predicate of a relative clause by the addition of the relativizing suffix *-gipa*. The notionally adjectival but morphologically verbal lexeme *da’r* ‘big’ in (6b) received exactly the same treatment. Thus we can say that the propositional function of modification is achieved in Garo by means of relative clauses, not by lexical modifiers. These relative clauses are built on the basis of verbs, that fulfill the propositional function of predication within the relative clause, in the same way they do in main clauses.

- (5) a. **Ca’-gen-ma?**
 eat-FUT-INT
 ‘Will you eat?’
- b. **ca’-gipa man.de.**
 eat-REL man
 ‘The man who eats.’
- (6) a. **Da’r-an-gen.**
 big-ITIVE-FUT
 ‘It will get big.’
- b. **da’r-gipa man.de**
 big-RELman
 ‘the big man’

In a similar way, in order to modify a head verb within a predicate phrase, a manner adverbial clause has to be created on the basis of a verbal lexeme, as illustrated in (7) (Burling 1961: 29).

- (7) a. Bi.a **gar-e** kat-an-aha
 3.SG throw-SUB run-ITIVE-PAST
 ‘Throwing he ran away.’
- b. **Rak-e** dok-aha
 strong-SUB hit-PAST
 ‘He hit hard.’

The subordinating morpheme *-e* is added to the verb *gar-* ‘throw’ in (7a) and to the notionally adjectival but morphologically verbal lexeme *rak-* ‘strong’ in (7b). These verbs fulfil the propositional function of predication within the respective subordinate clauses, which as a whole fulfil the function of modification.

The difference between Warao and Garo is thus that Warao has a class of flexible lexical items that may be used in several propositional functions, whereas Garo lacks classes of lexical items for the modifier functions, and has to resort to alternative syntactic strategies to compensate for the absence of a lexical solution. This difference may be represented as in Figure 2.

<i>language</i>	<i>head of pred. phrase</i>	<i>head of ref. phrase</i>	<i>modifier of ref. phrase</i>	<i>modifier of pred. phrase</i>
Warao	verb	non-verb		
English	verb	noun	adjective	manner adverb
Garo	verb	noun	-	-

Figure 2: Flexible, differentiated, and rigid languages

As Figure 2 shows, Warao and Garo are similar in that they have two main classes of lexemes. They are radically different, however, in the extent to which one of these classes may be used in the construction of propositions: the Warao class of NON-VERBS may be used in three propositional functions, the Garo class of NOUNS may be used as the head of a referential phrase only. Note that for a language to classify as flexible, the flexibility should not be an accidental property of a subset of the relevant lexeme class, but a general feature of the entire relevant lexeme class.

2.3. Parts-of-speech systems

The arrangement of the propositional functions in Figure 2 is not a coincidence. It reflects the parts-of-speech hierarchy in (8)³.

- (8) Head of Pred. phrase > Head of Ref. phrase > Modifier of Ref. phrase > Modifier of Pred. phrase

The more to the left a propositional function is on this hierarchy, the more likely it is that a language has a separate class of lexemes to realize that function and the more to the right, the less likely this is. The hierarchy is implicational, so that, for example, if a language has a separate class of lexemes to fulfill the function of modifier of a referential phrase, i.e. adjectives, then it will also have separate classes of lexemes for the functions of head of a referential phrase, i.e. nouns, and head of a predicate phrase, i.e. verbs. Similarly, if a language has no class of adjectives, neither will it have a separate class of lexemes for the function of modifier of a predicate phrase, i.e. manner adverbs. Note that the hierarchy makes no claims about adverbs other than those of manner.

The hierarchy in (8), combined with the distinction between flexible and rigid languages, leads to the classification of parts-of-speech systems in Figure 3. Figure 3 shows that languages can display three different degrees of flexibility (systems 1-3), and three different degrees of rigidity (systems 5-7). Of the languages discussed earlier Warao would be a type 2 language, English a type 4 language, and Garo a type 6 language. Note that I use the term ‘contentive’ for lexical elements that may appear in any of the functions distinguished so far.

<i>PoS system</i>	<i>head of pred. phrase</i>	<i>head of ref. phrase</i>	<i>modifier of ref. phrase</i>	<i>modifier of pred. phrase</i>
1	contentive			
2	verb	non-verb		
3	verb	noun	modifier	
4	verb	noun	adjective	manner adverb
5	verb	noun	adjective	
6	verb	noun		
7	verb			

Figure 3: Parts-of-speech systems

³ Hengeveld and van Lier (submitted), argue for a two-dimensional representation of this hierarchy. For the purposes of the current article a one-dimensional hierarchy is sufficient.

Next to the seven types listed in Figure 3, there are intermediate systems, showing characteristics of two neighbouring types. For instance, Turkish has verbs and non-verbs as lexeme classes in its basic lexeme inventory, a type 2 feature, but also displays derivational processes that produce flexible modifiers, a type 3 feature. It is thus classified as a language of type 2/3. As illustrated before, Garo has open classes of verbs and nouns, a type 6 feature, but also a small closed class of adjectives, a type 5 feature, so it is actually classified as a language of type 5/6. Including these intermediate types, there are 13 logically possible types of parts-of-speech system.

3 Morphological typology

3.1 Introduction

In this section I start out giving a general overview of parameters in 3.2, then I take a closer look at the parameter of fusion in 3.3, and then I zoom in on stem alternation, the aspect of fusion that is of central interest to the question addressed in this paper, in 3.4.

3.2 Parameters in morphological typology

In morphological typology three parameters are generally used (see e.g. Comrie 1981, Haspelmath unpubl.). These are listed in (9).

- (9) a. synthesis
 b. fusion
 c. stem combination

The relations between these parameters are given in Figure 4. Starting at the top Figure 4, the first parameter, SYNTHESIS, concerns the question of whether a word can be morphologically complex in a language or not. This distinguishes isolating from non-isolating languages. The second parameter, FUSION, is only relevant to morphologically complex languages, and concerns the question whether there are clear boundaries between the various grammatical and lexical morphemes within a word. This is the distinction between agglutinating and fusional languages. The third parameter, STEM COMBINATION, again only applies to morphologically complex languages, but is equally relevant in agglutinating and fusional languages. This parameter concerns the question whether there may or may not be more than one lexical stem within a word. This distinguishes incorporating from non-incorporating languages.

(iii) suppletion: Wambon (Trans New Guinea; de Vries 1989: 23) may have up to four different verb stem forms depending on the inflectional category that has to be expressed. An example is given in (15):

- (15) en- ande- na-
 eat(basic stem) eat(past/fut/imp.pl stem) eat(imp.sg stem)

What all these processes have in common is that there is not a single identifiable stem form that is used under all circumstances, and that the changes in the form of the stem cannot be productively derived on the basis of a phonological rule.

4 Hypothesis

In the light of the parts-of-speech hierarchy described in section 2, and taking into account the remarks on morphological typology in section 3, the following hypothesis may now be formulated:

(16) Hypothesis 1

The formal integrity of a lexeme, i.e. its formal independence of morphological material specific to a certain propositional function, increases its applicability in various propositional functions. Flexible lexemes are therefore not expected to show morphologically conditioned stem alternation.

It is crucial to note that what this hypothesis establishes is a relationship between the FUNCTIONAL possibilities of a lexeme on the one hand, and its FORMAL properties on the other. These two features of lexemes are logically independent of one another. Notice further that this hypothesis makes reference to morphologically conditioned stem alternation only, since purely phonologically conditioned stem alternation is fully predictable irrespective of the propositional function in which a lexeme is used. A final point to be made is that, given that the parts-of-speech systems in section 2 are defined on the basis of the functional behaviour of both basic and derived lexemes, this hypothesis will be tested with respect to the behaviour of basic and derived stems in relation to inflectional morphology only.

Given that flexibility comes in different degrees, as described in section 2, hypothesis 1 may be translated into more specific hypotheses depending on the type of parts-of-speech system that a language displays. These specific hypotheses are listed in (17):

(17) Hypothesis 1a

In languages of type 1 morphologically conditioned stem alternation will not occur with lexemes that may be used as heads of predicate phrases.

Hypothesis 1b

In languages of types 1-2 morphologically conditioned stem alternation will not occur with lexemes that may be used as heads of referential phrases;

Hypothesis 1c

In languages of type 1-3 morphologically conditioned stem alternation will not occur with lexemes that may be used as modifiers within referential phrases.

(Hypothesis 1d

In languages of type 1-3 morphologically conditioned stem alternation will not occur with lexemes that may be used as modifiers within predicate phrases.)

Hypothesis 1d is given between brackets since it cannot be tested in what follows, since only very few languages admit the expression of grammatical categories on manner expressions. Taking this restriction into account, the predictions with respect to the occurrence of stem alternation (SA) for the remaining propositional functions can be schematically represented as in Figure 5.

PoS	head of pred. phrase	head of ref. phrase	modifier of ref. phrase
1	SA disallowed		
1/2-2			
2/3-3			
3/4-4			
4/5-5	SA allowed		
5/6			
6			
6/7	SA irrelevant		
7			

Figure 5: The hypotheses

Table 1. *The sample*

Classification		Language
Afro-Asiatic (2)	Chadic (1) Cushitic (1)	Gude Oromo
Altaic (1)		Turkish
Amerind (7)	Northern (2)	Tuscarora
	Almosan-Keresiouan (1) Penutian (1)	Koasati
	Andean (1)	Quechua, Huallaga
	Equatorial-Tucanoan (1)	Guaraní
	Ge-Pano-Carib (1)	Hixkaryana
	Central Amerind (1)	Pipil
	Chibchan-Paezan (1)	Warao
Australian (3)	Gunwinyguan (1)	Ngalakan
	Pama-nyungan (1)	Kayardild
	Nunggubuyu (1)	Nunggubuyu
Austriac (5)	Austro-Tai (3)	Nung
	Daic (1)	Samoan
	Austronesian (2)	Paiwan
	Mal.-Pol. (1) Paiwanic (1)	Mundari
	Austroasiatic (1)	Miao
	Miao-Yao (1)	Basque
Basque (1)		Burushaski, Hunza
Burushaski (1)		Abkhaz
Caucasian (1)		Itelmen
Chukchi-Kamchatkan (1)		Tamil
Elamo-Dravidian (1)		West Greenlandic
Eskimo-Aleut (1)		(Etruscan)
Etruscan (1)		Nivkh
Nivkh (1)		(Hurrian)
Hurrian (1)		Polish
Indo-Hittite (2)	Indo-European (1)	Hittite
	Anatolian (1)	Wambon
Indo-Pacific (5)	Trans New Guinea (1)	Alamblak
	Sepik-Ramu (1)	Nasioi
	East Papuan (1)	Sahu
	West Papuan (1)	Mountain Arapesh
	Torricelli (1)	Ket
Ket (1)		Nama Hottentot
Khoisan (1)		(Meroitic)
Meroitic (1)		Navaho
Na-Dene (1)		(Nahali)
Nahali (1)		Babungo
Niger-Kord. (4)	Niger-Congo (3)	Kisi
	N-C Proper (2)	Bambara
	Centr. N-C (1) W Atlantic (1)	Krongo
	Mande (1)	Lango
	Kordofanian (1)	Ngiti
Nilo-Saharan (2)	East Sudanic (1)	Berbice Dutch
	Central Sudanic (1)	Chinese, Mandarin
Pidgins & Creoles (1)		Garo
Sino-Tibetan (2)	Sinitic (1)	Sumerian
	Tibeto-Karen (1)	Hungarian
Sumerian (1)		
Uralic-Yukaghir (1)		

Table 2. Parts-of-speech systems of the languages of the sample

<i>PoS</i>	<i>Languages</i>
1	Samoan
1/2	Guarani, Mundari
2	Quechua (Huallaga), Warao
2/3	Turkish
3	Ket, Miao, Ngiti
3/4	Lango
4	Abkhaz, Arapesh, Babungo, Bambara, Basque, Burushaski (Hunza), Hittite, Hungarian, Itelmen, Nama
4/5	Ngalakan, Polish
5	Koasati, Nasioi, Paiwan, Pipil, Sahu, Sumerian Alamblak, Berbice Dutch, Kayardild, Kisi
5/6	Oromo Wambon
6	Chinese (Mandarin), Garo, Gude, Nung, Tamil
6/7	West-Greenlandic Hixkaryana, Krongo, Navaho, Nivkh, Nunggubuyu, Tuscarora

Note that given the scarcity of languages of certain types, the various types of parts-of-speech systems are not represented evenly.

6 Results

6.1 *The data*

The data concerning stem alternation in the languages of the sample are listed in Table 3. In Table 3 a ‘Ø’ indicates the absence of stem alternation due to isolating morphology, a ‘–’ indicates the absence of stem alternation due to agglutinating morphology, and a ‘+’ indicates the presence of stem alternation due to fusional morphology. Notice that, of necessity, stem alternation cannot obtain with isolating morphology, since this involves the expression of grammatical categories as separate words. As a result, both ‘Ø’ and ‘–’ indicate absence of stem alternation, in contrast with ‘+’, which indicates the presence of stem alternation.

Table 3. *The data*

Language	PoS	H. Pr.Phr.	H.Ref.Phr	M.Ref.Phr
Samoan	1	∅	∅	∅
Mundari	1/2	-/+	-	∅
Guaraní	1/2	-/+	-	-
Warao	2	-	-	-
Quechua (Huellaga)	2	-/+	-	-
Turkish	2/3	-/+	-	-
Miao	3	∅	∅	∅
Ket	3	-/+	-/+	-
Ngiti	3	-/+	-/+	-
Lango	3/4	-/+	-/+	-/+
Nama	4	-	-	-
Ngalakan	4	-(1+)	-	-
Abkhaz	4	-/+	-	-
Arapesh	4	-/+	-	-
Basque	4	-/+	-	-
Itelmen	4	-/+	-	-
Burushaski (Hunza)	4	-/+	-/+	-
Hungarian	4	-/+	-/+	-
Babungo	4	-/+	-/+	-/+
Bambara	4	-/+	-/+	-/+
Hittite	4	-/+	-/+	-/+
Polish	4	-/+	-/+	-/+
Sahu	4/5	-	∅	∅
Paiwan	4/5	-/∅	∅	∅
Sumerian	4/5	-/+	-	-
Koasati	4/5	-/+	-/+	∅
Pipil	4/5	-/+	-/+	-
Nasioi	4/5	-/+	-/+	-/+
Berbice Dutch	5	-/∅	-/∅	∅
Kayardild	5	-	-	-
Alamblak	5	-/+	-	-
Kisi	5	-/+	-/+	-
Oromo	5	-/+	-/+	-
Wambon	5	-/+	-/+	-
Nung	5/6	∅	∅	∅
Chinese (Mandarin)	5/6	-/∅	-/∅	∅
Garo	5/6	-	-	-
Tamil	5/6	-/+	-/+	∅
West Greenlandic	5/6	-/+	-/+	∅
Gude	5/6	-/+	-/+	-
Nivkh	6	-/+	-/+	IRR
Hixkaryana	6	-/+	-/+	IRR
Krongo	6	-/+	-/+	IRR
Navaho	6	-/+	-/+	IRR
Nunggubuyu	6	-/+	-/+	IRR
Tuscarora	6/7	-/+	-	IRR

6.2 *Testing the hypotheses*

Although, as stated earlier, not all types are represented equally in the sample and the results can therefore only be considered to be preliminary, the data in Table 3 first of all confirm hypothesis 1 and its specific instantiations formulated in section 4, in the following ways:

- (i) in languages of type 1 there is no stem alternation at all;
- (ii) in languages of types 1/2-2 there is no stem alternation with lexemes that are used as heads of referential phrases or as modifiers within referential phrases. At the same time, there may or may not be stem alternation with lexemes that are used as heads of predicate phrases, e.g. there is in Huallaga Quechua, while there isn't in Warao;
- (iii) in languages of type 2/3-3 there is no stem alternation with lexemes that may be used as modifiers within referential phrases. At the same time, there may or may not be stem alternation with lexemes that are used as heads of predicate phrases and as heads of referential phrases, e.g. there is in Ngiti, there isn't in Miao;
- (iv) in languages of type 3/4-7 there may or may not be stem alternation for any of the relevant propositional functions, e.g. there is in Babungo, there isn't in Nama.

Hypothesis 2 formulated in section 4 is also confirmed. The data in Table 3 clearly show that in those cases in which stem alternation is allowed according to hypothesis 1, the presence or absence of stem alternation across functions can be predicted using the parts-of-speech hierarchy introduced in section 2.3 and reflected in the organization of Table 3. If a language allows stem alternation with lexemes used in a propositional function more to the right in the hierarchy, it will also allow stem alternation in propositional functions more to the left in the hierarchy, and conversely. Verbs are thus the most likely candidates for stem alternation, followed by nouns, adjectives, and, trivially, manner adverbs.

7 **Conclusions**

This paper has shown that there is a clear connection between the parts-of-speech system of a language and the morphological profile of that language. The study confirms claims by Plank (1998,1999) and Haig (unpubl.) that there is no overall correlation between the morphological type of a language and other features of that language. However, I hope to have shown that new typological insights may be obtained when (i) component features of morphological types are taken as the point of departure, in this case the presence or absence of stem alternation, and (ii) the characterization in terms of morphological type is not applied to languages in their entirety, but to individual propositional functions

within those languages. This way, a functionally motivated correlation has shown up between the flexibility of lexical items and the absence of stem alternation of these items, as well as an implicational generalization concerning the question which parts-of-speech are more likely to partake in stem alternation than others.

References

- Burling, Robbins (1961). *A Garo grammar* (Deccan College Monograph Series 25). Poona: Deccan College.
- Comrie, Bernard (1981). *Language universals and linguistic typology*. Oxford: Blackwell.
- Croft, William (2000). Parts of speech as language universals and as language-particular categories. In: Petra M. Vogel and Bernard Comrie (eds.). *Approaches to the typology of word classes* (Empirical Approaches to Language Typology 23), 65-102. Berlin: Mouton de Gruyter.
- Evans, Nicholas and Toshiki Osada (2005). Mundari: The myth of a language without word classes. *Linguistic Typology* 9.3, 351-390.
- Haig, Geoffrey (fc.). Word-class distinctions and morphological type: agglutinating and fusional languages reconsidered.
- Haspelmath, Martin (unpubl.). The agglutination hypothesis: a belated empirical investigation. Paper presented at ALT3, Amsterdam, August 1999.
- Hengeveld, Kees (1992). *Non-verbal predication: theory, typology, diachrony*. Berlin: Mouton de Gruyter.
- Hengeveld, Kees and Eva van Lier (submitted). Lexical and complex heads in Functional Discourse Grammar.
- Hengeveld, Kees and Jan Rijkhoff (2005). Mundari as a flexible language. *Linguistic Typology* 9.3, 406-431.
- Hengeveld, Kees, Jan Rijkhoff and Anna Siewierska (2004). Parts-of-speech systems and word order. *Journal of Linguistics* 40.3, 527-570.
- Kenesei, István, Robert M. Vago and Anna Fenyvesi (1998). *Hungarian*. London: Routledge.
- van Lier, Eva (2006). Parts-of-speech systems and dependent clauses: A typological study. *Folia Linguistica* 40.3/4, 239-304.
- Plank, Frans (1998). The co-variation of phonology with morphology and syntax: a hopeful history. *Linguistic Typology* 2.2, 195-230.
- Plank, Frans (1999). Split morphology: How agglutination and flexion mix. *Linguistic Typology* 3, 279-340.
- Romero-Figueroa, Andres (1997). *A reference grammar of Warao* (Lincom Studies in Native American Linguistics 6). München: Lincom.

Rijkhoff, Jan, Dik Bakker, Kees Hengeveld and Peter Kahrel (1993). A method of language sampling. *Studies in Language* 17.1, 169-203.

Skalička, Vladimír (1979). *Typologische Studien*. Braunschweig: Vieweg.

Tucker Childs, George (1995). *A grammar of Kisi* (Mouton Grammar Library 16). Berlin: Mouton de Gruyter.

de Vries, Lourens (1989). *Studies in Wambon and Kombai: Aspects of two Papuan languages of Irian Jaya*. PhD Dissertation, University of Amsterdam.

Kees Hengeveld
p.c.hengeveld@uva.nl
<http://home.hum.uva.nl/oz/hengeveldp>

Dynamic perspectives on lexical categorisation*

Niels Smit

ACLCLC, University of Amsterdam

The paper pursues a dynamic interpretation of the typology of parts-of-speech systems (PoS-systems) proposed in Hengeveld (1992). This classification characterises PoS-systems as specific mappings between functional categories in underlying clause structure and differentiated lexical categories that a language has available. Furthermore, Hengeveld argues that the possible mappings between grammar and lexicon are constrained by a PoS-hierarchy, which dictates that undifferentiated lexical categories may only range over contiguous sets of functional categories. Using data from category-changing derivation from a small set of languages with different PoS-systems, it will be argued here that Hengeveld's PoS-hierarchy can be given a dynamic interpretation, which is mirrored in the behaviour of languages with INTERMEDIATE SYSTEMS. A possible account of this process of lexical specialisation will be presented, according to which differentiated PoS-systems evolve out of flexible ones.

1 Introduction

Whereas over the past decades extensive research has been conducted on the subject of lexical categories, little attention has been paid to their interrelatedness from a dynamic perspective. The argument presented here means partially fill this gap. Taking as a point of departure Hengeveld's (1992) observations on Parts-of-Speech (PoS), the questions will be addressed how lexical categories tend to specialise from extremely flexible to fully differentiated in functional terms, and which role morphology could play in this process. In order to find an answer to these questions, data will be examined from a number of languages, each allowing for different degrees of functional flexibility of their lexical categories.

* This paper is an English revision of Smit (2002). A more recent version, which elaborates on the various transitional scenarios proposed here, was presented at PoS2006 in Amsterdam (June 8th, 2006), and has been in preparation since. I wish to thank two reviewers for their comments. For the present and all earlier versions, I am also greatly indebted to Kees Hengeveld, Eva van Lier, Josje Verhagen and Casper de Groot for their invaluable feedback. The remaining errors are of course my own.

The article is organised as follows: section 2 outlines the theoretical framework and defines some basic notions. In section 3, Hengeveld's Parts-of-Speech typology will be discussed. Also, an alternative representation of PoS-systems that gives a satisfactory account of so-called intermediate systems will be presented. The use of PoS-based typology in the domain of morphology, especially category-changing derivation, will be addressed in section 4. The varying restrictions that appear to exist on derivation in languages with different PoS-systems can be interpreted as an indication that lexical categories specialise dynamically, as is argued in section 5. From the extended classification of PoS-systems that is presented in section 4, a better understanding of these dynamic interrelationships between lexical categories can be obtained. Some concluding remarks are presented in section 6.

2 Theoretical background

2.1 *Clause structure in Functional Grammar*

Functional Grammar¹ (Dik 1978; 1989; 1997) is a structural-functional theory of language (Butler 2003a: 36), the core of which is formed by a layered UNDERLYING CLAUSE STRUCTURE (UCS) that specifies all semantic and pragmatic considerations that bear an influence on the surface form of the expression. UCS consists of a set of nested layers built around a PREDICATE, which contribute different aspects of pragmatic and semantic meaning to the overall structure. A set of expression rules is postulated to map this underlying structure onto actual linguistic expressions.

UCSs are generated by recursive application of a formalism that governs the internal structure of layers (cf. Hengeveld 1989). This formalism determines that each layer consists of a variable, the designation of which is constrained by one or more RESTRICTORS. Each first restrictor designates the HEAD of the unit; additional restrictors designate MODIFIERS. Furthermore, the entire designation of a variable can be further modified grammatically by one or more OPERATORS which designate dependent, non-lexical semantic and pragmatic categories, such as cardinality, tense, definiteness, etc. Heads and modifiers of layers have a

¹ Functional Grammar has evolved in Functional Discourse Grammar (FDG). Several important innovations have been made, including a shift from a monostratal to a multistratal perspective on underlying clause structure. As it is unclear so far exactly what consequences the separation of discursive and representational categories to orthogonal levels of representation has for Hengeveld's theory of parts-of-speech, I will not consider FDG in this paper. Some preliminary explorations of parts-of-speech in the new framework are presented in Hengeveld & Van Lier (ms.).

layered internal structure of their own, which obeys the same rules and allows for near-infinite recursion.

The main predicate (MP) is the core of each UCS. Its basic discursive function is PREDICATION of properties of, or relations between referent(s). All lexical items of a language are analysed as potential main predicates; FG thus distinguishes different categories of them (at least verbal, nominal and adjectival: Dik 1997:59), each with their own formal and functional properties. It is crucial that in the view of FG, MP is a possible *function*, and not a semantic or syntactic *property* of a lexeme, albeit that certain classes of lexical items seem to function easier and more often as such than others do.

The head of the main predicate layer (HoP), which designates a property or a relation, can be modified by elements (MiP) designating manner and internal aspect. Predicate phrases are inserted in the underlying clause structure with a predication frame, specifying its number of complements and their respective semantic roles. The constellation of a predicate, its frame and its participants forms a NUCLEAR PREDICATION, designating a state of affairs (SoA). This SoA can be grammatically and/or lexically located in time and space, thus forming a CORE PREDICATION².

Complements of predicates, either referring to various orders of entities in extra-linguistic mental worlds or to elements within discourse, are named TERMS. Like predicates, the extension of a Term is restricted by a HEAD and one or more optional MODIFIERS, henceforth abbreviated as HoT and MiT³. HoT and MiTs jointly determine the eventual designation of the term; this designation can be modified by one or more OPERATORS, which denote dependent semantic and pragmatic categories like cardinality, definiteness, etc.

The above clearly shows the internal structural parallel between predicates and terms. While their basic communicative functions are different (predication and reference, respectively), the designative capacities of both predicates and terms are determined by a head and modifiers.

Thus, we can distinguish four positions in the underlying clause structure, differing in their degree of communicative indispensability. Judging from the fact that an isolated main predicate can form a felicitous linguistic expression in itself, whereas the other functions cannot occur in isolation, it is inferred that predication communicatively is maximally indispensable. The second-most important function is that of reference. For the designation of both functions it goes that Heads, which are indispensable for the correct identification of the

² Higher layers in UCS, such as proposition, illocution and speech act, govern more abstract semantic and pragmatic categories. They will not be considered in this paper.

³ As Van Lier (p.c.) pointed out to me, it is inappropriate to speak of the modifier of a term phrase; rather, it is the modifier in a phrase that constrains its designation.

extension of UCS units in the extralinguistic world, are more important than modifiers, which merely constrain the extension set identified by the head. Predicate modifiers typically serve an even less ‘crucial’ goal, in that the quality of a relation arguably can be inferred in most cases from the information provided by the lexical head and/or the participants involved. The following hierarchy of functional positions in the clause emerges:

- (1) HoP > HoT > MiT > MiP

2.2 A functional definition of Parts-of-Speech

Hengeveld uses the above four positions in the UCS to provide functional definitions of parts-of-speech. He argues that a lexical element can in theory occupy any functional position in the clause, but only on one of these positions can it be used *per se*, or “...without further measures being taken.” (Hengeveld 1992: 58)⁴. For example in English, the lexical item *jealous* can be used as MiT by simply inserting it from the lexicon. However, if this same word was to be used as a HoP, we would need an adaptive morphosyntactic strategy, in the case of English a copular *be* - construction:

- (2) a. [The jealous boy]_{MiT}
 b. *The boy [jealous]_{HoP}
 c. The boy [*is* jealous]_{HoP}

It is exactly this behaviour that leads Hengeveld to classify *jealous* as an adjective. He argues that such a functional account of lexical categories, making a sharp distinction between lexical and syntactic units, has compelling advantages over other, semantically or morphosyntactically oriented approaches (Hengeveld 1992:49-52).

Thus, the four classical parts-of-speech are defined as follows. Verbs (V) are lexical items that can function *per se* as HoP. Nouns (N) are lexical items that can function *per se* as HoTs. Adjectives (A) in the same way can function *per se* as MiTs, while Manner Adverbs (MAdv)⁵ only function as MiPs. Not

⁴ Hengeveld’s further measures equal Croft’s notion of structural coding, while it excludes all marking used to indicate the lexeme’s behavioral potential (Croft 2003: 95-99).

⁵ Only Manner adverbs are taken into consideration, since they are the only adverbs that function as modifiers of the main predicate. Other (temporal and spatial) adverbs have a broader scope than just the predicate itself; rather, they can be said to modify the State of Affairs as a whole, and should as such be regarded irrelevant to the discussion at hand. Moreover, they usually form a closed class of items, which makes it doubtful whether or not one should analyse them as content lexemes in the first place.

surprisingly, lexical categories are ranked hierarchically, analogous to the hierarchy of functional positions. This yields the following hierarchy:

(3) V > N > A > MAdv

The hierarchies in (1) and (3) lead Hengeveld to make two predictions. First, the more to the left a certain part-of-speech is in the hierarchy, the more likely it is to form an independent, specialised lexical category of its own. Second, the presence of a certain lexical category in a language implies the presence of all other lexical categories further to the left as well. This means for instance that a language in which manner adverbs are identified is expected to distinguish between all three other parts-of-speech, too⁶.

3 PoS-systems

3.1 Basic PoS-systems

Languages vary in the extent to which they use distinct lexical categories to cover functional clausal positions. Some languages show a complete, one-to-one match in the number of word classes and the number of functional positions, as is the case in English. Others, like Warao (cf. table 1) have less lexical categories than functional positions; in order to preserve full expressability, these languages allow for more functional flexibility of one of those categories. Note that the choice for a flexible category is by no means arbitrary; if a language has a flexible lexical category, the theory predicts that it will cover a contiguous group of clausal slots at the right-most side of the hierarchy in (1). For example, if a flexible language has only three lexical categories, the flexible category will most likely range over the two modifier slots (MiT/MiP), and cannot range over MiP and HoT, for instance. The relation between the number of lexical categories and the number of functional positions constitutes the PoS-system of a language; the complete inventory of possible systems is represented in table (1). These systems can be used as a powerful means of typological classification, with the help of which numerous predictions can be made about syntactic and morphological behaviour of the language at hand.

⁶ Note that the hierarchy captures a tendency, not an implicational universal. As is noted in Hengeveld & Van Lier (ms.), among others, exceptions to this tendency can be found, mainly in the behaviour of the two categories of modifiers.

Table 1: Parts-of-Speech systems (Hengeveld 1992:69)

General type	No.	Language	HoP	HoT	MiT	MiP
Flexible	1	Samoan	Contentive			
	2	Warao	V	Non-verb		
	3	Ngiti	V	N	Modifier	
Differentiated	4	English	V	N	A	MAdv
Rigid	5	Guaraní	V	N	A	-
	6	Nunggubuyu	V	N	-	-
	7	-	V	-	-	-

At one end of the continuum, we find languages of PoS-type 1, having a sole lexical category with a high degree of functional flexibility. Such languages, for example Samoan, will heavily rely on syntactic and morphological strategies in order to conserve functional identifiability of their constituents. Located at the other end is the fully differentiated system that English has, showing a one-to-one correspondence between lexical categories and parts-of-speech. In order to identify the function of constituents in the utterance, languages with this system will need relatively little additional (morphosyntactic) means.

Of a somewhat different nature are rigid PoS-systems, which cover the last three rows of table 1. Languages with these systems lack the possibility to express one or more functional positions lexically, the most extreme case being a language like Tuscarora (Mithun 2000), which reportedly has only verbs and a limited number of noun-like items. In order to preserve the expressibility of all functional slots, such languages are expected to adopt non-lexical (syntactic) strategies to express those slots for which lexical means are lacking. Note that rigidity, parallel to flexibility, obeys the hierarchy parts-of-speech. It is therefore inconceivable for example, that a certain language lacks the possibility to express the HoT lexically (by means of a noun), while retaining a class of differentiated lexical elements for MiP. In this paper, rigid languages (i.e. PoS-type 4/5 and higher) will not be considered.

3.2 *Intermediate PoS-systems*

The classification of PoS-systems that has been presented so far looks quite straightforward; languages simply have a certain number of lexical categories that are mapped onto four functional positions. Whenever a language has less than four lexical categories but allows for all of its positions that they are expressed lexically, the category covering the lower positions of the hierarchy in

(3) is functionally flexible in the sense that its members can be used on different functional positions without additional morphosyntactic measures being taken.

However, matters appear to be slightly more complex than this, since not all PoS-systems can be classified so easily⁷; instead, a considerable number of languages must be classified as belonging to one system in some respects, but to another (neighbouring) system in other. Hengeveld (1992) only mentions the existence of these INTERMEDIATE POS-SYSTEMS, without assigning them a place in the overall representation in table 1.

Examples of such intermediate system languages are Mundari (Austro-Asiatic), Turkish (Altaic), Lango (Nilo-Saharan) and Dutch (Indo-European)⁸. For Turkish, for instance, it has been mentioned (Kornfilt 1997) that this language distinguishes only between verbs (occurring as HoP) and non-verbs (occurring in all other functional positions), which would make it a PoS-2 language. However, Turkish also appears to have a class of lexemes that can be solely used on modifier positions, which would lead to a classification of Turkish as a PoS-3 language. Clearly, Turkish is somewhere in between PoS-system 2 and PoS-system 3. The same goes for Lango (Noonan 1992): although the language has only three lexical categories (verb, noun and modifier, where members of the latter can be used on both modifier positions), it also has a class of lexemes that can be used as modifiers in main predicates phrases only, a feature that is characteristic for PoS-4 languages. These two facts combined would lead to a classification of the PoS-system of Lango as PoS-3/4. The third language that exhibits intermediate behaviour, Mundari, seems to alternate between PoS-systems 1 and 2, having both a class of extremely flexible lexemes and a class of (slightly less flexible) non-verbs.

The crucial difference between languages with discrete and intermediate PoS-systems seems to be that the latter have two flexible categories of lexemes,

⁷ Note that, in order to classify the PoS-system of a language, looking at the 'lexical organisation' of a language is not the only option available. Because of the typological power of this classification, as amply shown in the recent past (Hengeveld 1992; Hengeveld, Rijkhoff & Siewierska 2004), other characteristics of languages can also be used to classify a language's PoS-system, like predicability of lexemes, or certain restrictions on word order variation. This is convenient, since many descriptive grammarians define lexical categories in semantic or morphosyntactic terms rather than in functional terms, which makes it difficult to decide upon the PoS-system of the language at hand.

⁸ Genetic classification according to Ethnologue (2005). Note that for the compilation of the language sample in the original study, Ruhlen's (1987) classification was used in conjunction with the sampling method in Rijkhoff et al. (1993). On the basis of Ethnologue's classification and the sampling method proposed in Rijkhoff & Bakker (1998), that sample no longer counts as representative.

whereas the former have only one⁹. Note that languages of PoS-type 3/4 (like Lango) have only one flexible lexical category, on account of the fact that MAdv is the category covering the lowest slot in the hierarchy in (1), and can therefore not specialise further than it already has. The two flexible categories show considerable overlap in terms of their functional applicability, as is sketched in table 2.

Table 2: Parts-of-Speech systems, including intermediate types

General type	No.	Language	HoP	HoT	MiT	MiP
Flexible	1	Samoan	Contentive			
	1/2	Mundari	Contentive			
			<i>Non-verb</i>			
	2	Warao	V	Non-verb		
	2/3	Turkish	V	Non-verb		
				<i>Modifier</i>		
3	Ngiti	V	N	Modifier		
3/4	Lango	V	N	Modifier		
				<i>MAdv</i>		
Differentiated	4	English	V	N	A	MAdv

4 PoS-based typology of category-changing derivation

4.1 PoS-based derivational typology

Recent studies have argued that Hengeveld's PoS-typology constitutes a useful classificatory tool. While most references concern preliminary reports of ongoing research, there appear to be significant correlations between the PoS-system of a language and the way in which it behaves syntactically (cf. Hengeveld 1992; Hengeveld, Rijkhoff & Siewierska 2004; Van Lier 2006; Gómez-Rendón 2006; Erkelens 2006). In the present section, it is argued that PoS-typology also allows for an interesting perspective on the distribution of morphological phenomena, in this case of category-changing derivation.

Setting out from a language's PoS-system, reliable predictions may be made about the types of category-changing derivation that may be expected in a language. In part, this correlation between PoS-system and types of derivation is quite trivial. Knowing what parts-of-speech are available in a certain language,

⁹ Or none, in the case of a fully differentiated PoS-4 language like English. In those cases, the rightmost category is fully specialised as well.

one can safely rule out those types of category-changing derivation that involve other lexical categories than the ones present. However, the proposed typology has greater power than that; the combined power of the improved PoS-classification (figure 2) on the one hand and the derivational constraint formulated in section 4.2 on the other proves to yield predictions that can stand confrontation with the preliminary data set used in this paper, as subsection 4.3 will show.

4.2 Category-changing derivation

Category-changing derivation is one of the means a language has at its disposal to alter the lexical category to which an item belongs, thus making it fit in another functional position. The process itself consists of combining a source (being either a basic lexeme or a derivate itself) with a derivational affix, either segmental or suprasegmental.

Theoretically, in a language that has n lexical categories, there are $(n * (n - 1))$ possible kinds of category-changing derivation. However, there appears to be a restriction on those types that take the lexical category covering the lowest available functional slot(s) in the language as its source, as observed by De Groot (1998). Table 3 repeats the discrete and flexible PoS-systems; the lexical categories that cannot function as a source for leftward category-changing derivation are shaded. The figure shows that a PoS-2 language like Warao, having just verbs and non-verbs, will not allow for non-V \rightarrow V derivation, whereas a language like English does not allow for MAdv \rightarrow X derivation, X standing for any other lexical category.

Table 3: Restrictions on the choice of source for category-changing derivation

General type	No.	Language	HoP	HoT	MiT	MiP	
Flexible	1	Samoan	Contentive				
	1/2	Mundari	Contentive				
			<i>Non-verb</i>				
	2	Warao	V	Non-verb			
	2/3	Turkish	Non-verb				
			<i>Modifier</i>				
3	Ngiti	V	N	<i>Modifier</i>			
3/4	Lango	V	N	Modifier		<i>MAdv</i>	
Differentiated	4	English	V	N	A	MAdv	

Three points must be stressed here. Based on the available data, we can only be sure that the restriction at hand is valid for cases of derivation that involve a *change* of lexical category; although one would expect the same restriction to hold for cases of category-internal derivation as well, no such outcome can be warranted without further study. Second, this restriction only poses limits to the categories functioning as *sources* of category-changing derivation; it does not state anything about possible restrictions that involve limitations on the choice a language has for a target category. Third, alleged cases of *zero conversion* have been excluded from this research for opportunistic reasons, on account of the many thorny empirical and theoretical issues pertaining to it¹⁰.

4.3 *Checking the predictions*

4.3.1 *Some remarks on data quality*

For this paper a sample of 10 languages was used. These languages were chosen in such a way that maximal typological diversity was ensured, i.e. all relevant PoS-systems (PoS-1 through PoS-4) were equally represented. While paramount priority is ceded to the criterion of typological diversity, three other important demands for linguistic sampling, i.e. genetic diversity, geographical spread and balance¹¹ (Rijkhoff & Bakker 1998), were not met. This does not need constitute an insurmountable problem, however. Although genetic and geographical diversity in the current sample are not perfect, it may nevertheless be ruled out that the observed correlations between PoS-classification and derivational possibilities are specific to certain language families or areas. It goes without saying, nonetheless, that the investigation at hand ideally should be repeated on a larger scale with a sample that responds to all three demands.

¹⁰ Strict application of Hengeveld's theory would lead to the assignment of a flexible lexical category to lexemes exhibiting zero conversion. For instance, English saddleN → saddleV would constitute evidence that English has a flexible category ranging over the functional slots HoP and HoT, but excluding all others. While this would dispense with the theoretically suspicious notion of covert derivation (something which FG fiercely argued against throughout its existence), it disfigures Hengeveld's typology to a point where little fruitful classification remains. Zero conversion may be taken, however, as another indication that the monodimensional hierarchy of functional positions in (1) is fundamentally flawed, and should indeed be replaced by a tetrachoric classification of the kind proposed in Hengeveld & Van Lier (ms.).

¹¹ By balance, Bakker & Rijkhoff refer to the ideal situation in which each phylum is equally represented in the sample in terms of structural complexity. Simply put, the more complex a phylum is, the more items from that phylum should be present in the sample. In order to calculate structural complexity, Rijkhoff et. al. devised an ingenious formula, taking into account the total number of languages on a phylum on one hand, and its width and depth on the other.

The languages in the sample are follows: Samoan (Austronesian, PoS-1), Mundari (Austro-Asiatic, PoS-1/2), Warao (Isolate, PoS-2), Imbabura Quechua (Quechuan, PoS-2/3), Turkish (Altaic, PoS-2/3), Ngiti (Nilo-Saharan, PoS-3), Ket (Isolate, PoS-3), Lango (Nilo-Saharan, PoS-3/4), Dutch (Indo-European, PoS-3/4) Babungo (Niger-Congo, PoS-4) and English (Indo-European, PoS-4). PoS-classifications on these languages were performed by Hengeveld (1992) and Hengeveld et al. (2004) on the basis of syntactic behaviour¹². A small part of the available data will be presented here by means of illustration.

4.3.2 Category-changing derivation in discrete PoS-systems

In languages with discrete PoS-systems, the only form of category-changing derivation that will certainly not occur is the one that takes the lowest lexical category of that language as its source. This prediction holds throughout the sample; no occurrences of category-changing derivation departing from non-verbs, modifiers or MAdvS were encountered in languages with PoS-systems 2, 3 and 4, respectively.

Table 4: Derivational restrictions in ‘clear-cut’ PoS-systems. The shaded areas cannot function as sources for category-changing derivation

General type	No.	Language	HoP	HoT	MiT	MiP
Flexible	1	Samoan	Contentive			
	2	Warao	V	Non-verb		
	3	Ngiti	V	N	Modifier	
Differentiated	4	English	V	N	A	MAdv

What is more, all other types of category-changing derivation that theory allows for are indeed attested, albeit not necessarily in all languages examined. Babungo (PoS-4), for example, exhibits a very limited use of category-changing derivation; only verbs can be used as derivational source lexemes, whereas all other parts-of-speech can only function as derivational targets¹³:

¹² Recently doubts have risen about the classification of Quechua and Mundari. However, attested inconsistencies with the current classification concern syntactic behaviour rather than the lexical configurations themselves. Hengeveld did not classify Dutch. Since it is my native language, I felt confident to classify Dutch myself on the basis of its lexical configuration.

¹³ In the glossed examples, the Eurotyp guidelines, symbols and abbreviations (1993) were used, e.g. NR = nominaliser, VR = verbaliser, ADJR = adjectiviser. deVR should be read as ‘deverbaliser’.

- (4) a. V → N
 tey_V- → mè-téy_N
 begin → NR-begin
 ‘to begin’ → ‘the beginning’
- b. V → MAdv
 bwánné_V → bwanne-bwanne_{MA_{adv}}
 okay → okay-RDP
 ‘to be OK’ → ‘gently, slowly’

However, this behaviour is probably language-specific, since it does not occur in all languages of PoS-type 4. English serves as a neat example; there, all lexical categories (except of course MAdv) can function as derivational sources:

- (5) a. N → V
 computer_N → computer-ise_V
- b. V → A
 conceive_A → conceiv-able_A
- c. A → V
 white_A → white-en_V
- d. N → A
 university_N → universit-ary_A
- e. V → N
 run_V → run-er_V
- f. A → MAdv
 blunt_A → blunt-ly_{MA_{adv}}
- g. A → N
 jealous_A → jealous-y_V

Another type of derivation that does not occur in the sample is denominal verbalisation (N → V) in languages with PoS-type 3. Again, this may very well be a language-specific constraint, shared by the two PoS-3 languages in the sample (Ket and Ngiti). German for instance, another language classified as PoS-3, does allow for the construction of denominal verbs:

- (6) a. Auge_N
‘eye’
- b. äuge-In
eye-VR
‘to ogle’

As a general tendency, one can observe a unidirectional implication in the data presented so far; the fact that certain types of category-changing derivation surface in a certain language, does not at all imply that certain other types also will be present, even if allowed by theory.

4.3.3 Category-changing derivation in intermediate PoS-systems

If intermediate PoS-systems are treated as discrete systems in alternation, in the sense that they behave like PoS-n systems on one occasion and as PoS-(n±1) systems on another, no satisfactory explanation can be found for their derivational possibilities. That is, intermediate PoS-systems all share the feature that they can take a flexible category as the source for category-changing derivation, something which discrete PoS-systems cannot on account of the fact that their flexible category always is their ‘lowest’ rightmost category as well (cf. table 4), from which derivation is forbidden according to De Groot’s restriction. However, assigning intermediate systems a proper place in the PoS-classification in which two (partly overlapping) flexible lexical categories are postulated instead of just one, seems to offer a suitable explanation for the hitherto problematic behaviour of these languages.

Table 5: Towards an optimal representation of intermediate PoS-systems

General type	No.	Language	HoP	HoT	MiT	MiP
Flexible	1/2	Mundari		Contentive		
				Non-verb		
	2/3	Turkish	V		Non-verb	
				Modifier		
	3/4	Lango	V	N	Modifier	
					MAdv	

Once again, consider a language with an intermediate PoS-system like Mundari (PoS-1/2), having two flexible categories. Of these two (contentive and non-V), the second flexible category (which is the rightmost category as well) is not

fully fledged; it has a sub-category status, which can be told from the functional overlap it has with its superordinate. In the case of Mundari, we have a lexical category *contentive* that encompasses all four functional positions. ‘Within’ or below this category, Mundari has a category of non-verbs, which is one level less flexible in the sense that its members cannot be used as main predicates but are still flexible over the remaining three categories.

The advantage of the above interpretation is apparent; now that the second-rightmost category is interpreted as a flexible one as well, the data that intermediate PoS-systems present can be easily accommodated by a single PoS-classification for every language, instead of assuming an alternation between two discrete systems. As will be argued further down, this adaptation makes the present model suitable to account for the cross-linguistic dynamic development that PoS-systems seem to be involved in.

The case of Turkish provides us with another example of an intermediate PoS-system. Turkish (as is likely to be the case for other PoS-2/3 languages) has many instances of supposed $\text{mod} \rightarrow X$ derivation, which can be reinterpreted as category-changing $\text{non-V} \rightarrow X$ derivation, as shown in example (7). Kornfilt (1997) furthermore states at several occasions that most nouns (which, in the interpretation given here, are not nouns but non-verbs) can be used in adjectival contexts as well, something which is in line with their classification as non-verbs in table 5.

- (4) a. non-V \rightarrow V
 ak_{Non-V} ak-ar-v
 white white-VR
 ‘white / the white one’ ‘to whiten’
- b. non-V \rightarrow V
 gicir_{Non-V} gicir-da-v
 creak creak-VR
 ‘creaking (sound)’ ‘to creak’

The above approach to category-changing derivation in languages with alternating PoS-systems requires a shift in the conceptualisation of the derivational process. The fundamental difference with category-changing derivation in languages with discrete PoS-systems is, that the latter process involves a *change* in the lexeme’s applicability, whereas the former is concerned with a mere *restriction* of its functional applicability. Derivational processes in Mundari, for instance, modify extremely flexible lexemes in such a way that

they can no longer be used as main predicates (the ‘verbal’ usage). This type of ‘defective derivation’ is ubiquitous in Mundari (5)¹⁴:

- | | | | | |
|-----|----|----------------------------------|---|---------------------------------|
| (5) | a. | Contentive | → | non-V |
| | | <i>dub</i> _{Contentive} | | <i>du-nu-b</i> _{Non-V} |
| | | sit | | sit-<deVR> |
| | | ‘sit; the meeting; sitting’ | | ‘the meeting; sitting’ |
| | b. | Contentive | → | non-V |
| | | <i>ol</i> _{Contentive} | | <i>o-no-l</i> _{Non-V} |
| | | write | | write-<deVR> |
| | | ‘write; the writing; writing’ | | ‘the writing; writing’ |

We see that –nV– infixation in Mundari functions as a kind of ‘deverbaliser’, blocking the verbal use of the otherwise still flexible contentive *dub* in such a way that it can only be used nominally, adjectivally and adverbially (Note that many words have semantic restrictions on being used in all functional positions, however; it seems difficult to imagine a situation, for example, in which either the word *ol* or the word *onol* can be used adverbially). The Mundari case clearly shows that treating the alternating PoS-1/2 system as PoS-1 on one occasion and as PoS-2 on another is not a fruitful approach; the data that is obtained from category-changing derivation is a clear indication that two flexible categories are present at the same time in this language.

However, attractive a solution as this re-interpretation might seem, the danger of theoretical circularity is inherent to it. That is, many languages with intermediate PoS-systems share the feature that their rightmost category only consists of members which have been derived from another class; no autonomous, morphologically simple items are to be found in them¹⁵. The case of Dutch (PoS-3/4) can serve as an illustration: although it has a small class of proper MAdv_s, alongside with its much bigger class of functionally flexible modifiers, these MAdv_s are all morphologically complex, taking the form

¹⁴ The only other type of category-changing derivation that is logically possible in Mundari, yet disqualified by De Groot’s restriction, is non-V → contentive derivation. No instances of this type have been found thus far, however.

¹⁵ The observed behaviour does not hold for all the intermediate languages that were in my sample, Lango being the clearest counter-example. In this language, all MAdv_s (the rightmost category) together form an independent group without derivational relations with other categories. Quite the opposite is true for Dutch, having the same PoS-classification; all genuine MAdv_s in Dutch are derived from modifiers. Turkish (PoS-2/3) seems to be somewhere in between, having a huge class of derived modifiers and a few non-derived ones. These differences might be attributable to dynamic influence, as will be argued in the remainder of this article.

[MOD[*tjes*]]. The same goes for Mundari (PoS-1/2), which has only morphologically complex non-verbs, and, to a lesser extent, Turkish, having a few non-derived modifiers, outnumbered by a large quantity of derived ones.

These facts imply two things; first, it indicates that my previous conjectures about the sub-category status of the rightmost category are likely to be correct. However, this actually means that the other flexible category (the second-rightmost, so to speak) still must be subject to the restriction on category-changing derivation, which it violates. It appears, then, that neither interpretation can solve the fact that languages with intermediate PoS-systems do ‘forbidden categories’ as the source of derivation.

At this point, the question arises what (functional) principle is served by the restriction observed by De Groot. Further research on this account is needed; one might speculate, though, that the obstruction of derivation from the most peripheral category is a mechanism languages have at their disposal to restrict complexity within their own system. That is, it would be an unnecessarily complicating feature for a language to allow the derivation of lexical items that correspond to higher parts-of-speech from lexical items expressing lower parts-of-speech, especially since the latter are often derived themselves from a higher part-of-speech themselves¹⁶. In more general terms as well, however, lower members of a typological hierarchy can be easily imagined not to be equal to higher members in terms of productivity and accessibility.

If the above assumption could be proven to be correct in future research, then the question remains why languages with intermediate PoS-systems do not obey De Groot’s restriction. As will be argued in the next section, it can indeed be argued that this nonconformity is caused by the transitional dynamic status of these systems.

As we will see there, differences exist between the types of category-changing derivation allowed in clear-cut and intermediate PoS-systems. As opposed to the former, in which other restrictions on derivational possibilities than De Groot’s restriction were language-specific or even item-specific, there will prove to be one other type of category-changing derivation that does not occur in languages with intermediate systems. In the next section it will be shown that the most peripheral lexical category in languages with intermediate PoS-systems has an extremely restricted accessibility, not only in its eligibility

¹⁶ Alternatively, one might hypothesise that the rationale underlying De Groot’s restriction is, that languages do not ‘like to’ have leftward derivation from a flexible category. Such an explanation, however, is untenable because of several reasons, the one most worth mentioning being the fact that the ultimate right-side category (MAdv), yet not being flexible, shows the same avoidance of category-changing derivation, as is the case in languages of PoS-types 3/4 and 4.

as a source, but as a target as well. It will be argued that it is exactly this characteristic that points to dynamic development of PoS-systems.

5 Dynamic development of PoS-systems

5.1 A closer look at intermediate PoS-systems

In the former section, it has already been suggested that something peculiar is going on in languages with intermediate PoS-systems. On closer examination of the instances of Turkish category-changing derivation (PoS-2/3) in the data, it turns out that all cases of $X \rightarrow \text{mod}$ derivation involve source lexemes from the neighbouring category, namely that of non-verbs. In all cases in which the source lexeme is from another (read: the verbal) class, the derived lexeme can be used both as a noun and as a modifier. In other words, when the source category is that of verbs, then the derived ‘modifier’ is in fact a non-verb with nominal usability as well. This behaviour of Turkish is depicted in table 6.

Table 6: Restrictions on category-changing derivation in PoS-2/3 languages. The shaded *modifier*-category can never be taken as a derivational source; the slashed *non-V*-category is the ONLY category that can function as a derivational source to its right side neighbouring category

General type	No.	Language	HoP	HoT	MiT	MiP
Flexible	2/3	Turkish	V		Non-verb	
						<i>Modifier</i>

Turkish is not the only PoS-2/3 language behaving like this; Quechua for example, that has the same lexical configuration (verbs, non-verbs, modifiers), shows derivational possibilities and restrictions analogous to those of Turkish; example (6) shows instances of $V \rightarrow \text{non-V}$ derivation and $\text{non-V} \rightarrow \text{Mod}$ derivation.

- (6) a. V \rightarrow non-V
 miku_V miku-na
 eat eat-deVR
 ‘to eat’ ‘food; edible’
- b. non-V \rightarrow Modifier
 kushi_{Non-V} kushi-sha_{Mod}
 happy happy-deNR
 ‘happy; happiness; happily’ ‘happy; happily’

There are, however, no instances at all of $V \rightarrow \text{Mod}$ and $\text{Mod} \rightarrow X$ derivation. The absence of the latter is obvious when we take into account De Groot's restriction. But again, no derivation at all appears to be possible towards the lowest lexical category from a word class not directly neighbouring it.

The fact that languages with a PoS-1/2 classification only have two categories makes them unsuitable to test whether they show the same tendency; since only two lexical categories are present, the one is always neighbouring the other. If one takes a look at languages with a lexical configuration of PoS-type 3/4 on the other hand, it turns out that those languages do show the same behaviour as their PoS-2/3 colleagues. Consider for example Dutch (Hittite, Western-Germanic); Dutch has verbs, nouns and modifiers, and a restricted class of modifier-derived adverbs. These adverbs can be derived from modifiers only; deverbal and denominal derivatives that can be used adverbially, can always be used adjectivally as well. Dutch therefore shows the following 7 types of category-changing derivation: $V \rightarrow N$, $V \rightarrow \text{mod}$, $N \rightarrow V$, $N \rightarrow \text{mod}$, $\text{mod} \rightarrow V$, $\text{mod} \rightarrow N$, $\text{mod} \rightarrow \text{MAdv}$. Examples (7) and (8) show how 'adverbs' that are not derived from modifiers can be used both adjectivally and adverbially, whereas example (9) shows that modifier-derived adverbs are 'genuine' adverbs in that they cannot be used in the nominal modifier slot.

(7) a. bemoei-en_V $\text{bemoei-zuchtig}_{\text{Mod}}$
 meddle meddle-some

b. Hij gedraagt zich $\text{bemoeizuchtig}_{\text{Mod}}$
 'he acts in a meddlesome way'

c. Hij is een $\text{bemoeizuchtig}_{\text{Mod}}$ mens
 'he is a meddlesome person'

(8) a. cirkel_N $\text{circul-air}_{\text{Mod}}$
 circle circular

b. Hij redeneert $\text{circulair}_{\text{Mod}}$
 'he's reasoning in a circular way'

c. Dit is een $\text{circulaire}_{\text{Mod}}$ redenering
 'this is circular reasoning'

These two examples clearly show that both *bemoeizuchtig* and *circulair* are modifiers instead of adverbs, since they can be used on both modifier positions (adjectival and adverbial) without further measures being taken. Now consider example (9):

- (9) a. $zacht_{Mod}$ $zacht-je_{SMAAdv}$
 soft softly
- b. Hij spreekt $zachtje_{SMAdv}$.
 ‘He speaks softly.’
- c. *Een $zachtjes_A$ handdoek.
 ‘A soft towel.’

As opposed to (7) and (8), the conclusion reached here can be no other than that *zachtjes* is a manner adverb rather than a modifier, since it can only be used as a modifier of the main predicate, and not to modify the HoT. This process of the formation of modifier-derived adverbs is productive in Dutch; one frequently comes across *zachtjes* ‘softly’, *kleintjes* ‘humbly’, *fijntjes* ‘knowingly’, and so on. At the same time, however, MAdv-formation is limited by two powerful restrictions. Apart from the restriction that it can apply only to modifiers, and not to nouns or verb stems, there are two additional criteria that a source lexeme must meet in order to undergo adverbialisation. The first criterion is morphological; the process of adverbialisation in Dutch can only apply to modifiers that are not morphologically complex themselves. This criterion excludes all verb-derived and noun-derived members of the class of modifiers as potential candidates for adverbialisation. So, derivatives like *geluk-kig-jes* ‘luck-ily’ are not acceptable. Note that in English, which is a PoS-4 language, a comparable restriction does not exist¹⁷. The second criterion is semantic: since *-tje(s)* is also (primarily) used as the diminutive suffix in Dutch, it can only be used in an adverbialising context when attached to a modifier that denotes a property which lies along the semantic dimension [–BIG]¹⁸. So, adverbs like *enorm-pjes* ‘enormously’ and *geweldig-jes* ‘magnificently’ are unacceptable.

¹⁷ At the same time, this morphological criterion appears to have at least some validity in English as well. It appears that MAdvS which are derived from complex adjectives in –some, for example, are unacceptable: **meddlesomely*, **lonesomely*, etc.

¹⁸ The question how the diminutive suffix has gained this secondary use over the course of time, yet remains to be answered. We can however be sure that the two are somehow connected, given the semantic correspondences, as well as the identical phonological behaviour (adaptation of the first consonant of the suffix *-tjes* to the phonological environment).

So far, two characteristics of category-changing derivation in intermediate PoS-systems have been brought to the attention of the reader in this section. The first is that category-changing derivation in intermediate systems only can take the leftmost flexible category as its source when the target is the ‘lowest’ category. The second is that this kind of derivation is far more restricted than other types of category-changing derivation in intermediate PoS-systems. Although restrictions on eligibility of source categories do exist for clear-cut PoS-systems as well, in intermediate systems these have completely regularised.

5.2 *PoS-systems; a possible account of dynamic development*

One of the major issues in PoS-based typological approaches that has been left unattended in previous studies, is the issue of dynamic development. In the representation of PoS-systems, in Hengeveld’s version (Hengeveld 1992) as well as in my own extension of that classification (cf. figure 2), the suggestion is covertly present that systems of lexical configuration develop over time in the direction of a differentiated PoS-4 system. In the present section, an argument in favour of this interpretation will be presented. It turns out that what has been discussed so far neatly fits the dynamic scenario, which can be supposedly described as a kind of copy/paste process¹⁹.

As has been noted on several points in this article, the difference between an intermediate PoS-system and its discrete successor and predecessor is that the intermediate system has two flexible lexical categories instead of just one²⁰, as is the case in clear systems. In table 7, a sequence of three PoS-systems (PoS-2 through PoS-3) is represented.

Table 7: PoS-systems. Dynamic development

General type	No.	Language	HoP	HoT	MiT	MiP
Flexible	2	Warao	V		Non-verb	
	2/3	Turkish	V		Non-verb <i>Modifier</i>	
	3	Ngiti	V	N	Modifier	

The dynamic interpretation of the above systems would then be as follows. First, the rightmost lexical category is duplicated, during the process of which its

¹⁹ As was correctly pointed out by one of the reviewers, other dynamic scenarios are conceivable as well. As an important part of future research, a fuller classification of dynamic scenarios should be aimed at.

²⁰ Except PoS-3/4 languages (cf. section 3.2)

functional applicability is restricted in such a way that the newly arisen category can be used on the same functional positions, except the one highest in the hierarchy of parts-of-speech. In the example, this means that the category non-V (which entails the flexible use of the involved lexical item on three positions; HoT, modifier of HoT, modifier of MP) is replicated, but loses its applicability as HoT. This newly formed category has subcategory status; its members can only be derived from lexemes stemming from its neighbouring (superordinate) category. Moreover, semantic restrictions exist on derivation towards this new category.

The state that is reached now is the intermediate one, and exactly reflects the PoS-system of Turkish. Turkish has three lexical categories, of which the rightmost two are flexible. Yet, the 'lowest' one is one step less flexible than its left-hand neighbour. Furthermore, Turkish displays behaviour which favours the assumption that the newly formed rightmost category stems from the category directly to its left. Not only can members of that category function exclusively as the source lexemes to the derivation of modifiers; the members of the category of non-verbs can occupy the exact same position in the sentence as can modifiers themselves. In other words, modifiers can be traced back to non-verbs, but not to verbs.

But if so, how can the system of Turkish develop into that of Ngitu, which is a PoS-3 language? My assumption is, that Turkish non-verbs lose their functional flexibility over time. This loss comes about in the opposite direction of the parts-of-speech hierarchy. That is, all lower functions will be lost until only the highest function of the category (in this case the HoT-function) remains. The loss of lower functions is likely to be a matter of balance; since it is of little use for a language to maintain two lexical categories which show a functional overlap, this overlap will gradually disappear, during which the newly-formed category of modifiers will get 'stronger' in the sense that it will become more and more productive, in the end being open to derivation from other categories than the one directly neighbouring it as well. It is at that moment that the rightmost category assumes independent category status, and the language enters the next discrete PoS-system (in the example, PoS-3).

Summarising, the supposed dynamic transition of PoS-systems consists of three stages. First, a new category is formed through a process of flexibility-decreasing copying by means of derivational processes. The category that is used as the source for this copying (the hitherto lowest category) completely overlaps the functions of this new category. Next, the former lowest category gradually loses its flexibility, until its members can only be used in the highest function of the erstwhile flexible category. Supposedly (although evidence still has to be found for that claim), this goes hand in hand with the newly formed

lexical category opening up for derivation from other sources than its direct neighbour.

The same interpretation can be given to the other transitional phases (PoS-1 → PoS-2 and PoS-3 → PoS-4) in the PoS-classification, which renders it all the more plausible that dynamic development of PoS-systems can indeed come about as described above. Note, however, that this whole process is very slowly developing over time, presumably taking hundreds of years before reaching its state of completion. Moreover, one may wonder whether a full transition will ever occur; it is probable that some lexemes of the former lowest category will never fully lose all of their flexibility²¹.

Now everything has fallen into place, one should recall the deviant behaviour of intermediate PoS-systems with respect to De Groot's restriction on category-changing derivation from the most peripheral lexical category. The violation of this restriction can be attributed to the fact that intermediate systems are in a dynamic process of lexical differentiation, which further 'complicates' the system of the language in certain respects. This violation in turn may function as a catalyser to complete the transition to a next clear-cut stage, given an 'urge' languages apparently have to resolve violations of De Groot's restriction as soon as possible.

In the next and final section of this article, some concluding remarks of various natures will be brought forward. These concern methodological issues about the present study, as well as some theoretical implications that the argument made in this article may have for existing insights on parts-of-speech.

6 Some final remarks

6.1 *Comments on methodology*

In the previous sections of this article, synchronic data were used to make claims about supposedly dynamic behaviour. One might ask whether the kind of

²¹ Lango (PoS-3/4) can be viewed as an example of a language whose former lowest category has not fully specialised. The category of Manner Adverbs in Lango is a closed one, which is an indication to reclassify it as a rigidising language of PoS-type 4/5. If this were a correct reclassification, then one would not expect the language to have any flexible parts-of-speech left. That is, the dynamic interpretation of PoS-systems entails the claim that languages, before becoming rigid, must pass a stage of full differentiation (PoS-4), which excludes the existence of flexible classes in rigid languages. However, if it is assumed that the developmental stage in which the 'former lowest category' is made inflexible is somehow skipped, then the present lexical configuration of Lango follows logically. One should bear in mind that this kind of interpretation of a single language is purely hypothetical; only thorough diachronic research of previous stages of Lango could reveal whether the argument made here makes sense.

evidence that such research yields is actually valid. I believe it is, although one should abstain from making absolute statements based on synchronic cross-linguistic data alone. Yet, if synchronic data show that different languages might very well represent different dynamic stages of lexical configuration, and furthermore comply with a set of general principles that accounts for this variation, I see no principled objection against extrapolating these cross-linguistic findings to a single-language diachrony. One might compare the approach taken in this study with the strategy that is commonly used in historical linguistics; the reconstruction of Indo-European as the predecessor of European languages has come about largely by looking at synchronic, cross-linguistic data.

Of course it would be far more convincing to present diachronic data from every language in the sample, giving evidence about their previous PoS-stages. Feasibility is questionable, however, since for many languages we have few or no written records. It will prove nearly impossible to state anything about previous stages with any degree of certainty²². On the other hand, diachronic data available from other languages does not conflict with the assumptions made in this article. For Dutch, for example, we know that the manner adverbs were introduced relatively recently (300 years at most, of which only the last 100 years reveal a regular use). Before, it was a proper PoS-3 language with just verbs, nouns and modifiers.

6.2 *Related issues; prospects for further research*

Only a few of the issues that are related to PoS-type, its relations with derivational morphology and its possible dynamic development have been discussed here. Some fascinating questions that are only touched upon deserve closer examination in future research.

First, there appear to be more restrictive mechanisms that operate in the field of category-changing derivation than the two that were mentioned here. In very general terms, it seems that nouns are relatively unlikely sources for derivational processes in the languages looked at so far, whereas verbs on the other hand show restricted eligibility as derivational targets. Although these correlations appear to be mere tendencies from the sample used here, and not at all general constraints, it would be interesting to find out whether and how these facts can be linked to the specific PoS-system of a language and, if not, what other source they may be attributed to. In figure (1), the derivational possibilities

²² As one of the reviewers pointed out, diachronic developments can be inferred from synchronic data if an adequate sample (i.e. sufficiently large, containing multiple members of each genus) is available.

of the languages of the sample used are listed; the types of derivation that theory allows for, but which are nonetheless absent, are marked by a double strike-through.

Second, category-changing derivation seems to be just one morphological operation that is used to decrease flexibility. There are data from Mundari (PoS-1/2) suggesting that also appositional compounding in the sense of Bauer (1978) may result in less flexible new lexemes. For example, the Mundari non-verb *isinbasan* ‘bake-boil; cooking’ is formed through appositional compounding of two members of the category contentive. However, the resulting non-verb cannot be used as a main predicate anymore, while its separate members could. It would be interesting to find more examples of this process in other languages.

Third, the representation of intermediate PoS-systems that has been presented in the present article poses a serious problem for the hierarchy of parts-of-speech (Hengeveld 1992:68; cf. example (3)). Because of the fact that Hengeveld’s classification of PoS-systems does not contain the intermediate systems with their partly overlapping lexical categories, the hierarchy can be maintained without any problem; flexible PoS-systems are just described as ‘lumping’ more parts-of-speech into one lexical category, represented by the same lexemes. Non-verbs are described as lumpings of nominal, adjectival and adverbial functions, for example. However, as soon as the overlapping is introduced, we need the category non-verb as an independent notion, as well as contentive and modifier. This however, is problematic; the question is where these categories possibly fit in an implicational hierarchy. Since they more or less *contain* the ‘classic’ categories verb, noun, adjective and MAdv, it is hard to construct a one-dimensional hierarchy right away. This is also something which certainly needs further investigation.

Fourth, more recent work by Hengeveld & Van Lier (ms.) in the framework of Functional Discourse Grammar (the successor of Functional Grammar; Hengeveld & Mackenzie 2006) suggests that the whole hierarchy of parts-of-speech is in need of revision, and should be regarded as a tetrachoric grid instead, in which the notional oppositions predication-reference and head-modifier are no longer put on a single scale. It would be interesting to see whether the predictions that such a reconception of the parts-of-speech hierarchy produces are also consistent with the data on cross-category derivation, and possibly could solve some of the puzzling cases that remain.

target → Source ↓	Contentive	Non-verb	Modifier	Verb	Noun	Adjective	MAdv
Contentive	X	Mundari					
Non-verb		X	Quechua Turkish	Quechua Turkish			
Modifier			X	Lango Dutch	Lango Dutch		Lango Dutch
Verb		Warao Quechua Turkish	Ket Ngiti Lango Dutch	X	Ket/Dutch Ngiti Lango Babungo English	Babungo English	Babungo English
Noun			Ket Ngiti Lango Dutch	Ket Dutch Ngiti Lango Babungo English	X	Babungo English	Babungo English
Adjective				Babungo English	Babungo English	X	Babungo English
MAdv							X

Figure 1: Derivational possibilities in the languages of the sample used in Smit (2002)

7 Conclusion

In this article we have seen that, on the basis of cross-linguistic data from the domain of category-changing derivation, a strong point can be made in favour of the position that PoS-systems, which largely govern the overall lexical organisation of a language, are in a consistent process of dynamic development. Generalising over what is found in the separate languages in the sample, a tendency towards a one-to-one, isomorphic organisation of the lexicon can be observed, ultimately resulting in a differentiated PoS-system where each class of forms has a clearly distinguishable function.

References

- Bakker, Dik et al. (1992). EUROTyp Guidelines. Strasburg: Eurotyp Working Papers.
- Bauer, Laurie (1983). *English Word-Formation*. Cambridge: CUP.
- Butler, Christopher S. (2003). *Structure and Function*. Studies in Language Companion Series 63. Amsterdam: John Benjamins.
- Croft, William (2003). *Typology and Universals*. 2nd edition. Cambridge Textbooks in Linguistics. Cambridge: CUP.
- De Groot, Casper (1998). Parts-of-Speech and category derivation. Talk given at the 8th morphology meeting, June 11-14, 1998, Budapest.
- Dik, Simon C. (1978). *Functional Grammar*. North-Holland Linguistic Series 37. Amsterdam: North-Holland.
- Dik, Simon C. (1989). *The Theory of Functional Grammar*. Functional Grammar Series 9. Dordrecht: Foris.
- Dik, Simon C. (1997). *The Theory of Functional Grammar*. 2 volumes. 2nd edition, edited by Kees Hengeveld. Functional Grammar Series 20. Berlin: Mouton de Gruyter.
- Erkelens, Marian (2006). Children Know how to Use their Verbs, Nouns and Adjectives from the Start. Paper presented at PoS2006, Amsterdam, June 8th 2006.
- Gómez-Rendón, Jorge (2006). Condicionamientos tipológicos en los préstamos lingüísticos del castellano: las partes de la oración [typological conditioning in linguistic borrowings from Spanish: Parts-of-Speech]. *Actas del XIV Congreso del Alfal*. Monterrey, Mexico: ALFAL.
- Hengeveld, Kees (1989). Layers and Operators in Functional Grammar. *Journal of Linguistics* 25 (1), 127-157.
- Hengeveld, Kees (1992). *Non-verbal Predication*. Functional Grammar Series 15. Berlin: Mouton de Gruyter.
- Hengeveld, Kees, Jan Rijkhoff & Anna Siewierska (2004). Parts-of-Speech Systems and Word Order. *Journal of Linguistics* 40 (3), 527-570.
- Hengeveld, Kees & Eva van Lier (ms.). *Lexical and Complex Heads in Functional Discourse Grammar*.
- Hengeveld, Kees & J. Lachlan Mackenzie (2006). Functional Discourse Grammar. In Brown, Keith (ed.), *Encyclopedia of Language and Linguistics*, 668-676. 2nd edition. Amsterdam: Elsevier.
- Kornfilt, Jaklin (1997). *Turkish Reference Grammar*. Routledge Descriptive Grammars. London: Routledge.
- Mithun, Marianne (2002). Noun and Verb in Iroquoian Languages. Multicategorisation from Multiple Criteria. In Comrie, Bernard & Petra Vogel (eds.), *Approaches to the Typology of Word Classes*, 397-420. Berlin: Mouton de Gruyter.

- Noonan, Michael (1992). *A Grammar of Lango*. Mouton Grammar Library 7. Berlin: Mouton de Gruyter.
- Osada, Toshiki (1992). *A Reference Grammar of Mundari*. Tokyo: University of Foreign Studies.
- Raymond, Gordon jr. (2005). *Ethnologue. Languages of the World*. 15th edition. Dallas: SIL.
- Rijkhoff, Jan, Dik Bakker, Kees Hengeveld & Peter Kahrel (1993). A Method of Language Sampling. *Studie in Language* 17, 169-203.
- Rijkhoff, Jan & Dik Bakker (1998). Language Sampling. *Linguistic Typology* 2 (3), 263-314.
- Ruhlen, Merrit (1987). *A Guide to World's Languages*. Stanford: Stanford University Press.
- Smit, Niels (2002). De rol van derivatie bij lexicale specialisatie [the role of derivation in lexical specialisation]. Unpublished M.A. thesis, University of Amsterdam.
- Van Lier, Eva (2006). Parts-of-Speech Systems and Dependent Clauses: a Typological Study. *Folia Linguistica* 40 (4), 239-304.

Niels Smit
University of Amsterdam
Spuistraat 210, office 309
email: n.smit@uva.nl

Emphatic Multiple Negative Expressions in Dutch A by-product of the loss of Negative Concord

Hedde Zeijlstra

University of Amsterdam

Double Negation languages such as Dutch and German still exhibit constructions, such as Dutch niemand niet ('nobody not') or nooit geen ('nothing no'), that seem to have a Negative Concord (NC) reading. Since these constructions normally have an emphatic reading, these are called Emphatic Multiple Negative Expressions (EMNE's). In this paper I discuss the difference between so-called EMNE's and plain NC constructions. I demonstrate that EMNE's are fundamentally different from NC constructions, and that for that reason EMNE's should not be taken to indicate traces of NC in DN languages. Instead I argue that EMNE's are best analysed as lexical items that consist of two semantic objects, of which one is semantically negative. By applying partial reconstruction at LF both semantic objects can take scope from a different position in the tree. EMNE's are the result of the disappearance of NC in Dutch. After the loss of the preverbal negative marker en/ne, strings containing two n-words or an n-word and a negative marker niet could no longer act as a cue for NC and therefore had to be stored in the lexicon. The death of Dutch NC, so to speak, led to the birth of EMNE's. Finally the discussion of EMNE's and the fact that they could not be taken to be instances of NC sheds more light on the nature of NC. The fact that NC is subject to parametric variation supports the view that n-words in NC languages are not negative quantifiers.

1 Emphatic Multiple Negative Expressions in Dutch

In languages such as Dutch and German every morphosyntactically negative element corresponds to a semantic negation. Consequently, whenever two such elements occur in the same clause, the semantics of this clause also contains two negations. Such languages are called Double Negation (DN) languages after the law of Double Negation, according to which two negations cancel each other out. Examples of multiple negative expressions in Dutch can be found in (1) below.

- (1) a. *Niemand zei niets.* Dutch
 Nobody said nothing
 DN: ‘Nobody said nothing’ = ‘everybody said something.’
- b. *Geen mens was daar niet bij.*
 No man was there neg at
 DN: ‘No man wasn’t there’ = ‘everybody was there.’

The fact that there is a one to one correspondence between morphosyntactically negative elements and semantic negations is not surprising from a compositional perspective. The semantics of the sentences in (1) follows immediately from the lexical semantics of the negative items. However, DN languages are typologically quite rare. Most languages that exhibit multiple negative items in one clause do not exhibit DN readings (cf. Haspelmath 1997; Zeijlstra 2004). Instead, many languages exhibit Negative Concord (NC). In NC constructions multiple morphosyntactically negative elements correspond to only one semantic negation. This is illustrated in (2) for Italian and in (3) for West Flemish. Although each negative element can express negation in isolation, a joint occurrence of two negative elements in those languages yields only one semantic negation.

- (2) a. *Non ha telefonato.* Italian
 Neg has called
 ‘He didn’t call.’
- b. *Nessuno ha telefonato.*
 Nobody has called.
 ‘Nobody called.’
- c. *Non ha telefonato a nessuno.*
 Neg has called to nobody
 NC: ‘He didn’t call anybody.’
- (3) a. ... da Valère *nie* nor us goast.¹ West Flemish
 ... that Valère neg to house goes
 ‘... that Valère doesn’t go home.’

¹ After (Haegeman 1995: 118)

- b. ... da Valère *niemand* kent.²
 ... that Valère nobody knows
 ‘... that Valère doesn’t know anybody.’
- c. ... da Valère *niemand nie* kent.³
 ... that Valère nobody neg knows
 NC: ‘... that Valère doesn’t know anybody.’

The difference between DN and NC languages seems to be an instance of parametric variation. Within the Indo-European language family most Germanic languages (with the exception of West Flemish, Bavarian, Yiddish and a number of Dutch and German dialects) exhibit DN, whereas most Slavic and Romance languages exhibit NC.

However, in DN languages such as Dutch and German one may find examples of constructions in which two negative elements also yield one single semantic negation, as is shown in (4) and (5). These constructions are prescriptively ruled out, but found in many (substandard) varieties of Dutch and a substantial number of German (substandard) varieties. Since these constructions go along with an emphatic reading (see section 2.1), these constructions are called *Emphatic Multiple Negative Expressions* (EMNE’s).

- (4) a. Zij heeft *nergens geen* zin in.⁴ Dutch
 She has nowhere no lust in
 ‘She doesn’t feel like anything at all.’
- b. Hij gaat *nooit niet* naar school.
 He goes never neg to school
 ‘He never ever goes to school.’
- c. Zij hebben *nooit geen* geld.
 They have never no money
 ‘They never have any money.’
- (5) Sie hat *nie keine* Lust. German
 She has never no lust
 ‘She never feels like anything at all.’

² After (Haegeman 1995: 128)

³ After (Haegeman 1995: 131)

⁴ All examples have been judged by at least 15 native speakers of Dutch. In cases where judgements differed this has been indicated by the percentage sign (%).

In parallel constructions, such as the one in (6), the presence of an additional negative marker on the final conjunct is even the preferred option as has been reported by (Barbiers 2002).

- (6) *Niemand* was op het feest, Piet *niet*, Jan *niet*, *niemand* [?](*niet*). Dutch
Nobody was at the party, Piet neg, Jan neg, nobody neg
'Nobody was at the part. Piet wasn't, Jan wasn't, nobody was.'

The question now rises what the status of these EMNE's (in DN languages) is. Either these EMNE's are instances of NC that surface in DN languages, or EMNE's constitute a phenomenon of their own and are only superficially reminiscent of NC expressions. The first position has been defended by (Van der Wouden 1994; Giannakidou 2000; Weiss 2002) amongst others. In this paper I defend the opposite view by demonstrating that EMNE exhibit fundamentally different behaviour from NC and that they should thus be analysed in a different fashion. I argue that EMNE's are complex lexical items consisting of one semantic negation and one or more indefinites. I then show that this analysis correctly accounts for the syntactic and semantic behaviour of EMNE's. Furthermore, I motivate the idea that EMNE's are complex lexical items by demonstrating that they are a by-product of the change of Dutch from an NC to a DN language that took place around the 17th century.

This paper is constructed as follows. In section 2 I discuss a number of differences between EMNE's and NC expression. In section 3 I propose my analysis that takes EMNE's to be lexical items and show how the differences between EMNE's and NC expressions follow immediately under this approach. In section 4 I discuss the diachronic development of EMNE expressions. Section 6 concludes.

2 Emphatic Multiple Negative Expressions vs. Negative Concord

2.1 Empirical differences between EMNE's and NC

Despite their superficial similarities, EMNE's differ from standard NC constructions in at least five different aspects, which have been listed below:

- (7) Differences between EMNE's and NC expressions:
- a. EMNE's always have an emphatic reading; NC constructions usually do not;
 - b. EMNE's are subject to strict adjacency conditions, contrary to NC constructions;

- c. The first part of the EMNE must carry stress, otherwise it is ruled out;
- d. The meaning of an EMNE is not always straightforward, contrary to most NC expressions;
- e. The formation of EMNE's is not productive; speakers generally differ with respect to which EMNE they accept and which they do not accept;

One of the most striking differences between plain NC constructions and EMNE's is, as the name has already indicated, the fact that EMNE's always give rise to emphatic readings. NC expressions, on the other hand, give rise to plain readings. Even stronger, in pure NC languages, such as Italian the usage of the NC construction is even dispreferred if an emphatic reading is intended; in those cases a Negative Polarity Item (NPI) usually replaces the n-word. This is shown in (8) and (9) for Italian and Dutch. The reading of the Dutch example in (8)a. is identical to the reading of Italian (9)a., and the same holds for the readings in the b. examples.

- (8) a. Hij heeft *niemand niet* gezien. Dutch
 He has nobody neg seen
 'He didn't see ANYbody.'
- b. Hij heeft *niemand* gezien.
 He has nobody seen
 'He didn't see anybody.'
- (9) a. *Non* ha visto alcunché. Italian
 neg has seen anybody
 'He didn't see ANYbody.'
- b. *Non* ha visto *nessuno*.
 neg has seen nobody
 'He didn't see anybody.'

The second difference between EMNE's and NC constructions is that the two negative elements of an EMNE have to be strictly adjacent, whereas two elements that have established an NC relation still allow other material to intervene. In Italian, as shown in (10), the two NC elements are separated by the verbs *ha* and *telefonato*. In (11) however, it is shown for Dutch that whenever other lexical material intervenes between the two negative elements, only a DN reading can be obtained.

- (10) Ieri *non* ha telefonato *niente*. Italian
 Yesterday neg has called nothing
 ‘Nobody called yesterday.’
- (11) a. Gisteren heeft *niemand niet* gebeld. Dutch
 Yesterday has nobody neg called
 ‘Nobody at all called yesterday.’
- b. *Niemand* heeft gisteren *niet* gebeld.
 Nobody has yesterdayneg called
 *‘Nobody at all called yesterday.’
 ✓ ‘Nobody didn’t call yesterday.’

The third difference between EMNE’s and plain NC constructions is that for EMNE’s the stress must fall on the first element. If the second element carries stress, again only the DN reading is yielded (see (12)). Stress patterns do however not change the negative semantics in NC languages in this respect.

- (12) a. Hij heeft *NIKS niet* gezegd. Dutch
 He has nothing neg said
 ‘He didn’t say anything (at all).’
- b. Hij heeft *niks NIET* gezegd.
 He has nothing neg said
 *‘He didn’t say anything (at all).’
 ✓ ‘There is nothing he didn’t say.’
- (13) a. Gianni *NON* ha detto *niente*. Italian
 Gianni neg has said nothing
 ‘Gianni did NOT say anything.’
- b. Gianni *non* ha detto *NIENTE*.
 Gianni neg has said nothing
 ‘Gianni didn’t say ANYthing.’

A fourth difference between EMNE’s and NC is that the meaning of an EMNE construction, apart from the ‘lost negation’, is not always compositionally derived. In most cases the reading of sentence containing an EMNE corresponds to the reading of the sentence in which the second negative element is replaced by its non-negative counterpart, modulo the emphatic effect. This is illustrated in (14) below.

- (14) a. Zij leest *nooit geen* boek. Dutch
 She reads never no book
 ‘She never reads any book.’
- b. Zij leest *nooit* een boek.
 She reads never a book
 ‘She never reads a book.’

Apparently, it is the fact that the second indefinite also carries negative morphology that leads to the emphatic reading of *nooit* (‘never’). This holds for all EMNE’s that I have discussed so far. This is however not the case in (15)a. below. In (15)a. the negative indefinite existential quantifier *geen* (‘no’) cannot be replaced by its positive counter part *een*, or by a zero-determiner, as shown in (15)b. In order to express the non-emphatic reading of (15)a. *niks* (‘nothing’) has to be removed instead of *geen* and the reading of (15)d. in which *geen* is modified by the adverb *helemaal* (‘absolutely’) is equivalent to the reading of (15)a. This indicates that, apart from the loss of the negation, not all EMNE’s are built up compositionally. On the contrary, it indicates that the behaviour of some EMNE’s is idiosyncratic in some cases; on the other hand, the behaviour of plain NC expressions is not.

- (15) a. Ik heb er *niks geen* aardigheid in. Dutch
 I have there nothing no pleasure in
 ‘I don’t like it all.’
- b. *Ik heb er *niks (een)* aardigheid in.
 I have there no a pleasure in
- c. Ik heb er *geen* aardigheid in.
 I have there no pleasure in
 ‘I don’t like it.’
- d. Ik heb er *helemaal geen* aardigheid in.
 I have there absolutely no pleasure in
 ‘I don’t like it all.’

This idiosyncratic nature of EMNE’s is also reflected by the fact that the class of EMNE expressions is not productive. Several EMNE’s are accepted by most speakers of Dutch, such as *nooit niet* or *niks geen*, but many other EMNE’s are only accepted by some speakers of Dutch. Only a minority of my informants accepts the examples below.

- (16) a. %Ik heb *niemand niets* gegeven.⁵ Dutch
 I have nobody nothing given
 ‘I didn’t give anything to anybody at all.’
- b. %Ik heb *nergens niet* gezocht.
 I have nowhere neg looked.for
 ‘I didn’t look (for it) anywhere.’

On the basis of the differences between EMNE’s and NC expressions, I conclude that these two phenomena do not represent two sides of the same coin, but are different in nature and require a different explanation.

2.2 *Theoretical consequences of the differences between EMNE’s and NC*

The question now rises what the status of these EMNE’s (in DN languages) is. Given the conclusion that has been presented above, EMNE’s cannot be correctly analysed as instances of NC that surface in DN languages. This position had originally been defended by (Van der Wouden 1994; Giannakidou 2000; Weiss 2002) amongst others. (Weiss 2002), for instance, argues on the basis of such examples that DN is even an artefact of normative principles and that all speakers of a DN language actually exhibit underlying NC.

Since EMNE’s are not instances of NC, they must be analysed in a different way. In the next section I propose an analysis that takes EMNE’s to be complex lexical items. However, the observation that EMNE’s are fundamentally different from NC constructions has not only consequences for the analysis of EMNE’s, but also for NC itself.

It follows that NC is subject to cross-linguistic variation and is thus restricted to a limited number of languages. This forms a strong indication that languages are subject to parametric differences with respect to the interpretation of clauses consisting of multiple negative elements. Consequently, NC is not likely to be the result of some mode of interpretation, a view that has been proposed in the literature several times (Haegeman and Zanuttini 1991; Haegeman and Zanuttini 1996; de Swart and Sag 2002). These scholars have argued that n-words are negative quantifiers that are able to undergo a process of polyadic quantification, which results in their NC readings. However, as modes of interpretation are not subject to parametric variation, the strict distribution

⁵ The percentage sign (‘%’) indicates that the sentence is only acceptable for some speakers of the language.

between NC and DN languages cannot be explained without making additional assumptions.⁶

The problems for a negative quantifier analysis of n-words as mentioned above do not hold for other analyses of NC. Analyses that take n-words to be different from negative quantifiers already predict cross-linguistic variation with respect to NC. This is for instance the case for analyses that take n-words to be NPI's (Ladusaw 1992; Giannakidou 1997; Giannakidou 2000) or lexically ambiguous between NPI's and negative quantifiers (Herburger 2001). The same holds for the explanation of NC in terms of syntactic agreement between (multiple) n-words and a negative operator (Brown 1999; Penka and von Stechow 2001; Zeijlstra 2004).

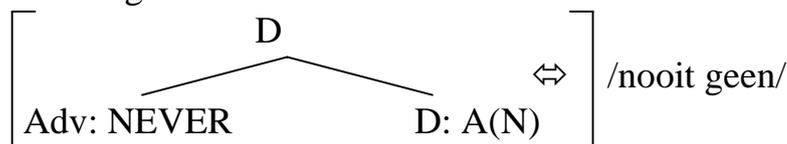
The observations and conclusions that have been formulated in section 2.1 thus further support the view that n-words are different from negative quantifiers.

3 Emphatic Multiple Negative Expressions as Lexical Items

3.1 Proposal

Following on the difference between EMNE's and NC expressions, I propose that, notwithstanding their complex appearance, EMNE's are Lexical Items (LI's). In short, I take an EMNE such as *nooit geen* or *niemand niet* to be a single LI that consists of two different semantic objects: one negative indefinite and an additional non-negative indefinite or marker. Hence, the entire EMNE contains only one semantic negation.⁷ This means that the lexical representation of an EMNE like *nooit geen* is as in (17). Note that (17) denotes the lexical representation of a single morphological word that contains multiple (mismatching) semantic functions. In this sense EMNE's are crucially different from idiomatic expressions, which consist of structures of different morphological words that are lexically stored

(17) *Nooit geen*:



⁶ See (De Swart 2006) for an OT-based analysis to account for typological differences within this negative quantifier approach.

⁷ At this point in the reasoning the fact that the EMNE consists of only one negation seems a bit stipulative, but this is motivated in the next section in terms of the diachronic development of EMNE's.

The structure in (17) consists of two parts that do not match semantically: temporal adverbs cannot modify D(P)'s.⁸ In a sentence like (18) the adverb *nooit* applies to the entire VP (*geen boek leest*), whereas *geen* applies to the NP *boek* ('book').

- (18) ... dat Jan *nooit geen* boek leest.
 ... that Jan never no book reads
 '... that John never reads a book (at all).'

In order to have both semantic objects take scope from their appropriate position I argue that movement followed by partial reconstruction applies in these constructions. Partial reconstruction has been adopted for many different syntactic phenomena, for instance anaphora binding or the syntax of *wat-for* constructions. Following standard syntactic assumptions the ambiguity in (19) follows from the fact that *himself* can be interpreted in either the lower or the higher copy. In the latter case *which picture of himself* is partially reconstructed in its base position (Grohmann, Hornstein et al. 2005).

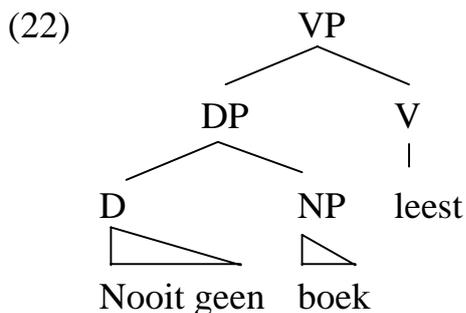
- (19) John_i wondered which picture of himself_{i/j} Fred_j liked.
 (20) [John wondered [[which ~~picture of himself~~] [Fred liked [~~which~~ picture of himself]]]]

The same mechanism applies to EMNE constructions. Let us simply follow each step in the derivation of (18). For explanatory purposes I neglect all extra derivational steps that are required for Quantifier Raising effects, since these do not conflict with the proposal. First the LI *nooit geen*, having a D label, must select for an NP, *boek* in this case. This produces (21).

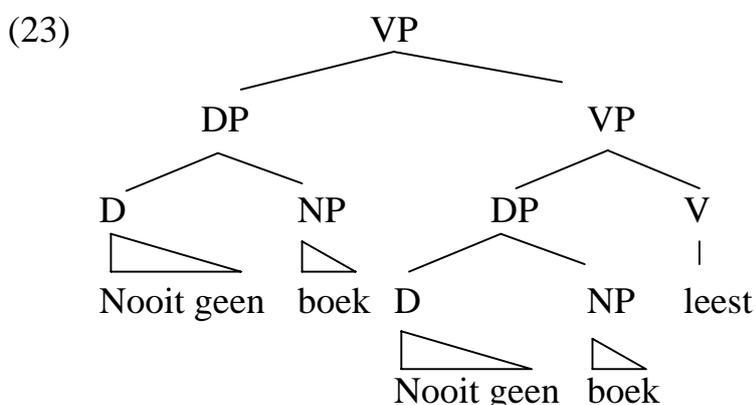
- (21)
-

At the same time, the verb *leest* ('reads') selects for a DP and merges with (21), thus creating (22).

⁸ Cf. (Von Stechow 2002). Moreover, due to the fact that the first part of every EMNE is always a negative quantifier (never, nowhere, nothing, nobody), the semantics of these elements do not allow an in situ interpretation.



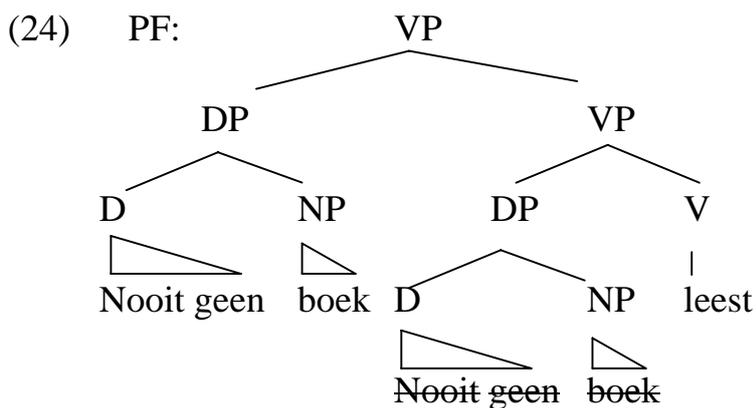
Finally, the DP moves out of its VP complement position to a position adjoining VP, from where the adverbial part of it can already take scope, as is shown in 0.^{9,10} Following the copy theory of movement (Chomsky 1995), this means that the entire DP is copied and that the copy merges with VP. At this point there are two copies.



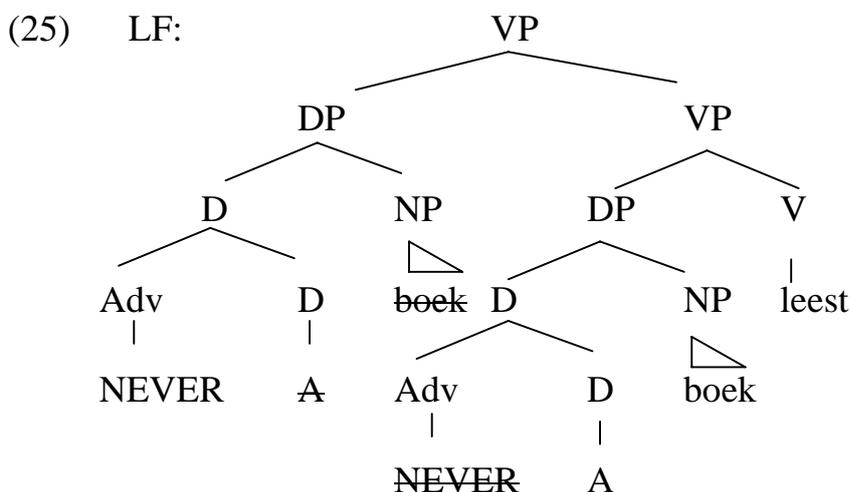
After Spell-Out, all deletion operations have to apply twice: once on the PF side, and once on the LF side. Following the copy theory of movement PF deletion usually targets the lowest copy and the highest copy gets phonologically realised. Then the derivation meets all requirements that the phonological component (the Sensori-Motor system in Chomsky's terms) imposes. The PF of (18) consists thus of (24).

⁹ Depending on one's theoretical preferences, this movement can be postponed until after Spell-Out

¹⁰ This kind of movement is different from the traditional minimalist movement in terms of probe-goal relations. The kind of movement described here is highly similar to Quantifier Raising, which is also triggered by semantic requirements rather than morpho-syntactic requirements. In a number of recent studies several proposals have been formulated in which so-called foot-driven movement has been said to extend to other syntactic domains (cf. Platzack 1996; Koenenman 2000; Van Craenenbroeck 2006 a.o.),



On the LF side things are slightly more complicated. We have seen that the entire DP has moved to a VP adjunct position. However, only the adverbial part (*nooit*) can be interpreted in this position and not the argument DP.¹¹ On the other hand, the adverbial cannot be interpreted semantically in the lower copy, but the DP argument can. Consequently, LF deletion of one of the two copies will yield a structure that is not interpretable at LF and therefore violates Full Interpretation (Chomsky 1995). The only way that deletion can take place is by means of partial reconstruction, such that the determiner part of *nooit geen* plus *boek* is deleted in the higher copy and the adverbial part is deleted in the lower one. This means that at LF all D material will be interpreted in the lower copy, whereas all adverbial material will be interpreted in the higher one. Hence the derivation changes into (25).

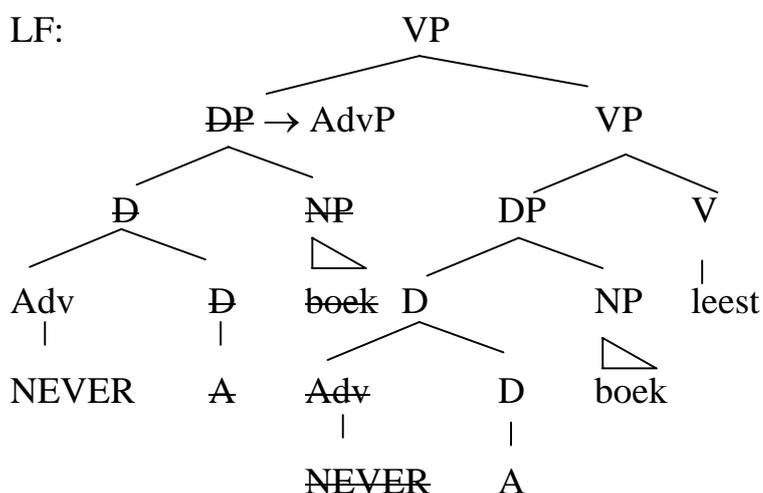


However, (25) still faces problems: the VP still seems to be modified by a DP in adjunct position. The highest copy in (26) seems to be one in which *nooit* is a DP headed by an empty D° that is adjoined to the adverb. However, despite the

¹¹ In proposals such as Cinque (1999) adverbial classes have functional projections of their own. This does not change the argumentation, since those positions are not available for DP's either.

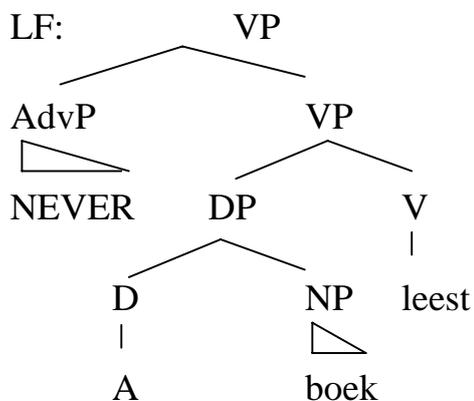
fact that the EMNE *nooit geen* has been lexically assigned the categorical status of a determiner (which was required in order to select for NP's), the adverb *nooit*, as it surfaces in the higher LF copy, may by no means carry determiner status in the LF (26). But on closer inspection, this is what has already been achieved. Let us focus at the higher DP copy in (25). Every element in this copy that contains a D feature has been deleted. Since projection is nothing but the projection of one feature of the heading element, in this case the D label on the top node of the copy can only result from the presence of D-features in the highest copy. But in (25) all these features have been deleted. Hence there is no D feature to project in the first place, and (25) is actually (26) in disguise, where the label DP has changed into AdvP, since the [Adv] feature is the only feature available that can project.

(26) LF:



Trivially, (26) can be rewritten as (27), which is the same LF as that of a sentence in which a negative adverb would have been combined with an indefinite DP, such as (28).

(27) LF:



- (28) ... dat Jan *nooit* een boek leest.
 ... that Jan never a book reads
 ‘... that Jan never reads a book.’

The fact that (18) and (28) are structurally identical demonstrates that the fact that EMNE’s consist of two different semantic objects, i.e. objects with different semantic functions, does not imply that these semantic objects cannot be part of one and the same LI.

Additional evidence in favour of the analysis in terms of complex lexical items that undergo partial reconstruction at LF comes from the occurrence of split scope constructions. Take for instance the expression in (29):

- (29) Er hoeft *niemand* te vertrekken.
 There needs nobody to leave
 ‘Nobody needs to leave.’ ($\neg > \square > \exists$)

The only possible reading that is available for this sentence is one in which negation scopes above the modal verb, but where the modal outscopes the indefinite. (Penka and Zeijlstra 2005) argue that the negative quantifier must be analysed as a complex lexical item that consists of a negation (NOT) and an indefinite (A PERSON), spelled out together as /niemand/.¹² (Penka and Zeijlstra 2005) argue that in the case of (29) the entire LI *niemand* raises to a position higher than the modal. Since *hoeft* is an NPI it must be outscoped by negation; however, due to the there-construction the embedded indefinite is not to allow scope over the modal verb and therefore the indefinite part is only interpretable in a position below *hoeft*. The LF of (29) is thus:

- (30) [[NOT A PERSON]_i [needs [[NOT A PERSON]_i to leave]]]

Hence, much in the same vein as the EMNE’s, partial reconstruction must apply, thus providing extra support for the analysis of EMNE’s in terms of complex lexical items.

3.2 Explaining the differences between EMNE’s and NC

Thus far I have shown that it is possible to take EMNE’s to be LI’s and have their different components operate from different structural positions as a result of partial reconstruction. This lexical analysis demonstrates that it is not

¹² Adopting this analysis implies that EMNE’s can be lexically decomposed into one negation and two indefinites. The reader can verify that adopting this proposal does not change about the presented analysis.

necessary to account for EMNE's in terms of NC and it paves the way for a parametric account for NC. In this subsection I argue that the differences between EMNE's and NC constructions immediately follow as a result of their lexical status. For reasons of convenience, below I repeat the list of differences mentioned in (7).

- (31) Differences between EMNE's and NC expressions:
- a. EMNE's always have an emphatic reading; NC constructions usually do not;
 - b. EMNE's are subject to strict adjacency conditions, contrary to NC constructions;
 - c. The first part of the EMNE must carry stress, otherwise it is ruled out;
 - d. The meaning of an EMNE is not always straightforward, contrary to most NC expressions;
 - e. The formation of EMNE's is not productive; speakers generally differ with respect to which EMNE they accept and which they do not accept;

The fact that EMNE's, being emphatic, have a slightly different meaning, than their counterparts consisting of a single negative element, is no longer unexpected, since they are all different LI's. The question now is why all these EMNE's are emphatic and do not exhibit other semantic differences in comparison to their non-EMNE counterparts. In other words, why is it that *nooit geen boek* obtains an emphatic reading and *nooit een boek* does not? The answer to this question lies in the diachronic development of EMNE's, and will be dealt with in the next section.

The fact that EMNE's are subject to strict adjacency conditions also falls out immediately. Given the fact EMNE's are LI's (and single words), they must be included spelled out in one and the same position.

Since under this approach EMNE's are single LI's, they are expected to be subject to phonological reduction. Other frozen expressions, such as English *how'bout* or *thank you*, for instance are pronounced as if it were more or less one word. Phonological reduction effects are indeed found with respect to EMNE's, but are not that strong. People still recognise an EMNE as consisting of two different parts. Nevertheless, it can be shown that the phonological behaviour of EMNE is different from that of two independent words, as is shown below for the way that EMNE's give rise to special stress patterns. Take for instance the following minimal pair:

- (32) a. ... dat Jan *NOOIT* *geen* boek leest.
 ... that Jan never no book reads
 ‘... that Jan never reads a book.’
- b. ... dat Jan *nooit* *GEEN* boek leest.
 ... that Jan never no book reads
 ‘... that Jan never reads a book.’

In (32)a. the first part of the EMNE obtained stress, in (32)b. the second part. These stress effects do not stand on their own. Elements carrying heavy stress, as in (32), require a preceding phonological break Φ , as shown in (33).

- (33) a.... dat Jan Φ *NOOIT* *geen* boek leest.
- b.... dat Jan *nooit* Φ *GEEN* boek leest.

However, as is well known from the work by (Selkirk 1984) (adopted in a somewhat different version by (Van der Koot and Neeleman 2006)), prosodic structure reflects syntactic structures. Phonological boundaries cannot be introduced at each point in the structure, but can only follow after the right edge of a maximal phrase. The prosodic structures in (33) must be derived from different structures in (34).

- (34) a. ... [[dat Jan] [[NOOIT geen boek] leest]]
- b. ... [[dat Jan] [[nooit] [GEEN boek] leest]]

It follows from (34) that for the b sentence *nooit* must constitute a maximal projection on its own, whereas this is not required for the a sentence with stress on *nooit*. Since EMNE’s are LI’s no part of it can be a maximal projection, thus ruling out EMNE’s carrying stress on their second part.

The fourth and fifth differences between EMNE’s and plain NC constructions also follow from the fact that EMNE’s are LI’s. EMNE’s such as *niks geen* in (35) behave differently from most other EMNE’s in the sense that not the first element modifies the second but that the second one seems to be modified by the first.

- (35) Ik heb er *niks* *geen* aardigheid in. Dutch
 I have there nothing no pleasure in
 ‘I don’t like it all.’

In (35) *niks*, although it is a shortened form of *niets* (‘nothing’) is not an argument. At first sight this seems to run against the observation that in EMNE constructions the second element modifies the first one. However, in older variations of Dutch non-argument *niks* could be used with a reading of ‘not at all.’ The following examples from 18th and 19th century Dutch illustrate this behaviour of *niks*:

(36) Ik geloof *nix* aan den satan.¹³
 I believe nothing to the Satan
 ‘I don’t believe in Satan at all.’

(37) Die studie is me *niks* meegevallen.¹⁴
 That study is me nothing with.fallen
 ‘That study didn’t meet my expectations at all.’

For most of my informants this usage is still possible in examples like (38)-(39) in contemporary Dutch, although the utterances sound slightly archaic. It should be noted that currently this usage of *niks* does not render any emphatic effects anymore.

(38) a. Ik heb er zin in.
 I have there lust in
 ‘I feel like it.’

b. Ik heb er *geen* zin in.
 I have there geen lust in
 ‘I don’t feel like it.’

c. %Ik heb er *niks* zin in.
 I have there nothing lust in
 ‘I don’t feel like it.’

(39) a. Ik heb er last van.
 I have there load of
 ‘I suffer from it.’

b. Ik heb er *geen* last van.
 I have there no load of
 ‘I don’t suffer from it.’

¹³ Leevend: 4.40

¹⁴ Gelukkige familie: 235

- c. %Ik heb er *niks* last van.
 I have there nothing load of
 ‘I don’t suffer from it.’

Niks geen is thus nothing but the semantic combination of the negation (the meaning of *niks*) and the indefinite *een* (‘a(n)’). Now, it follows that *geen* can be replaced by *niks geen*, resulting in an emphatic reading ‘absolutely not a’, which is of course equivalent to ‘absolutely no’.¹⁵ The fact that *niks* can still be used in EMNE constructions, but is no longer productive as an emphatic negation is not surprising under the lexical analysis of EMNE’s.

The fifth property concerns the large amount of speaker variation with respect to EMNE’s. Since the acquisition of EMNE’s is a purely lexical and not a syntactic process, each EMNE has to be acquired independently. Therefore relatively infrequent EMNE’s such as the ones in (40) are only accepted by only a minority of speakers.

- (40) a. %Ik heb *niemand niets* gegeven. Dutch
 I have nobody nothing given
 ‘I didn’t give anything to anybody at all.’
- b. %Ik heb *nergens niet* gezocht.
 I have nowhere neg looked.for
 ‘I didn’t look (for it) anywhere.’

To conclude, all differences between EMNE’s and plain NC constructions immediately follow when the proposal presented in section 3.1 is adopted. I take this to be firm support for the analysis that EMNE’s are not instances of NC, but are LI’s consisting of two independent semantic objects, of which one is semantically negative.

3.3 *Additional questions*

In this section two further questions will be addressed: (i) is it possible for EMNE’s to appear in Spec,CP position and (ii) why is the usage of an EMNE in a parallel construction almost obligatory

A property of V-to-C languages, such as Dutch and German, is that only one constituent may appear to the left of the finite verb in main clauses. It is thus predicted that EMNE’s, being LI’s, should be able to appear in this projection. This is indeed the case for most EMNE’s as shown in (41) and (42).

¹⁵ Note that *niks* can still be used as a negative argument, also in EMNE constructions.

- (41) *Nooit geen* boek heb ik gelezen. Dutch
 Never no book have I read
 ‘I have never ever read a book.’
- (42) *Niks geen* aardigheid heb ik er in. Dutch
 Nothingno pleasure have I there in
 ‘I don’t like it at all.’

However, not every EMNE is allowed to occur in first position. *Nooit niet*, for example, is not allowed in this position. If *nooit niet* is indeed an LI, the question rises why (43) is ruled out.

- (43) **Nooit niet* heb ik het gedaan. Dutch
 Never neg have I it done
 ‘I never ever did it.’

I suspect that this ban on sentence-initial *nooit niet* follows from a more general ban on the negative marker *niet* immediately preceding a finite verb in verb second position, as shown in (44).

- (44) **Niet* heb ik gegeten. Dutch
 Neg have I eaten
 ‘I didn’t eat.’

The ban on sole negative markers in sentence-initial position is a property that is attested across language (see (Payne 1985; Horn 1989) for an overview of facts, analyses and discussions). However, as (Barbiers 2002) has shown, there are contexts in Dutch where *niet* in sentence-initial position is accepted, as shown in (45).

- (45) ✓Ik had wel gezien dat Jan aankwam, Dutch
 I had prt seen that Jan arrived,
 maar *niet* had ik gezien dat Ed vertrok.¹⁶
 but neg had I seen that Ed left
 ‘I did see that Jan arrived, but I had not seen that Ed left.’

According to some informants, the replacement of *niet* by *nooit niet* improves the sentence. This may account for the ban on *nooit niet* in sentence-initial position.

¹⁶ Barbiers (2002: 21)

- (46) %Ik had altijd wel gezien dat Jan aankwam, Dutch
 I had always prt seen that Jan arrived,
 maar *nooit niet* had ik gezien dat Ed vertrok.
 but never neg had I seen that Ed left
 ‘I did see that Jan arrived, but I had not seen that Ed left’

However, one should be careful since informants are uncertain about their judgements, as sentences such as (46) are hard to evaluate. In any case, I argue that the ban on sentence-initial *nooit niet* follows from some particular properties of this EMNE, and that the analysis that EMNE’s are LI’s not contradicted by these data.

Finally the example in (47) needs to be discussed. The question is why *niet* in the final conjunct is almost obligatory. Why can’t *niemand* appear on its own?

- (47) a. *Niemand* was op het feest, Piet *niet*, Jan *niet*, *niemand niet*.
 Nobody was at the party, Piet neg, Jan neg, nobody neg
 ‘Nobody was at the party. Not Piet, not Jan, not anyone’
- b. ?*Niemand* was op het feest, Piet *niet*, Jan *niet*, *niemand*.
 Nobody was at the party, Piet neg, Jan neg, nobody
 ‘Nobody was at the party. Not Piet, not Jan, not anyone’

Note that the reading of final *niemand* must be emphatic. This already calls for either an EMNE, or another emphatic modifier, such as *helemaal* (‘absolutely’), as shown in (48):

- (48) *Niemand* was op het feest, Piet *niet*, Jan *niet*, *helemaal niemand*.
 Nobody was at the party, Piet neg, Jan neg, absolutely nobody
 ‘Nobody was at the party. Not Piet, not Jan, not anyone at all’

A second reason why an EMNE is preferred in these parallel constructions is that the prosodic parallelism must be maintained as well. Take the example in (49). Here the particle *wel* is used in both the main clause and the first and second conjuncts. If *wel*, which is not required in the final conjunct for semantic reasons, is left out, the sentence sounds odd as well. This is the second reason why final *niet* in (47) may not be left out.

- (49) Er waren wel wat mensen gekomen. Marie wel, Piet wel,
 There were prt some people come. Marie prt, Piet prt,
 mijn vrienden *(wel).
 my friends prt
 ‘Some people came, Marie did, Piet did, my friends did.’

To conclude, although EMNE’s are normally prescriptively ruled out, the empathic reading and particularly the prosodic parallelism requirement call for the inclusion of an EMNE. This joint force is stronger than the purely emphatic reasons effects that have played a role in the other examples discussed in this paper, which explains why the inclusion of EMNE’s is almost obligatory in these parallel constructions, despite the fact that they are prescriptively ruled out.

4 The development of Emphatic Multiple Negative Expressions

Thus far I have addressed the question of how EMNE’s should be analysed. Yet one of the main questions, why are there are EMNE’s in the first place, is still open. The answer to this question is of acute interest since it still needs to be explained why meanings assigned to EMNE’s contain only one negation. In order to answer this question, one first needs to have a look at the way sentential negation was expressed in Middle Dutch.

Middle Dutch was special with respect to the expression of negation in two ways: first, it was an NC language, contrary to Modern Dutch; second, it had two negative markers instead of one: *en/ne* and *niet*, much like French *ne...pas*. The first property is shown in (50), the second in (51).

- (50) a. Ic *en* sag *niemen*.¹⁷ Middle Dutch
 I neg saw n-body
 ‘I didn’t see anybody.’
- b. Die *niemen en* spaers.¹⁸
 That nobody neg saves
 ‘Who saves nobody.’

¹⁷ Cf. Hoeksema (1997)

¹⁸ Vanden levne ons heren 2018.

- c. Den onderseten *niet en* was //gheoorlooft *niets niet* met allen //
The shepherds neg neg was //allowed nothing neg with all

aen enenandren paus te vallen.¹⁹

PRT an other pope to attack

‘The shepherds were not at all allowed to attack another pope together.’

- (51) a. *En* laettine mi spreke *niet*.²⁰ 13th Century Dutch

Neg let.he me speak neg

‘If he doesn’t let me speak.’

- b. *Sine* ware *niet* genedert heden.²¹

She.neg were neg humiliated currently

‘She wasn’t humiliated currently.’

- c. Dat si *niet en* sach dat si sochte.²²

Thatshe neg neg saw that she looked-for

‘That she didn’t see what she looked for.’

A particular property of Middle Dutch *en/ne* is that it cannot occur by itself (except for a number of contexts, cf. (Postma 2002)). In negative sentences without indefinite arguments (without n-words, that is) the additional negative marker *niet* licenses the presence of *en/ne*. In contexts in which there is an n-word, the n-word may license *en/ne* as well and *niet* can be left out. Although *niet* may participate in NC relations as well (see (50)c), this does not seem to serve any specific purpose and therefore the co-occurrence of *en/ne* in combination with both an n-word and *niet* is rather rare. The same holds for combinations of *en/ne* in combination with more than one n-word. Note that many instances of multiple n-words are often redundant. Take for instance current Italian (52):

- (52) *Nessuno* ha detto *niente* a *nessuno*.

Nobody has said nothing to nobody

‘Nobody said anything to anybody.’

In this example the presence of the second *nessuno* is superfluous since it already follows from the fact that nobody said anything that nobody said

¹⁹ Brabantsche yeesten 7957-9.

²⁰ Lanceloet: 20316.

²¹ Lanceloet: 20166.

²² Lanceloet: 20042.

anything to anybody. Hence, without special motivation combinations of n-words tend to be avoided.

As a result the majority of negative sentences in Middle Dutch consisted either of *en/ne* in combination with *niet* or a single n-word. However, as has been known since Jespersen's seminal work (Jespersen 1917) preverbal negative markers such as Middle Dutch *en/ne* lost force and gradually started to disappear. Its usage became optional as shown below in (53), which consists of two examples out of one text. In the middle of the 17th century for instance the usage of *en/ne* was almost entirely gone. The development of en-deletion in Holland Dutch is shown in table 1.

- (53) a. Maer *niemant* gaf gehoor.²³ 1638 Dutch
 But nobody gave obeying
 'But nobody obeyed.'
- b. Dat *niemant* zich het woên der vyanden *en* kreunde.²⁴
 Thatnobody SE the raging of.the enemies neg moaned
 'That nobody cared about the raging of the enemies.'

Table 1: *En*-deletion in Holland Dutch (in %) (Burridge 1993)

	V1	V2	V-final
1300	43	28	8
1400	75	25	36
1500	77	48	28
1600	100	30	8
1650	100	100	98

Following the line of reasoning pursued in this paper, NC has been taken to be subject to parametric variation. This means that the language learner on the basis of the language input has to determine whether the target language is an NC or a DN language. This means that if the cue to set the parameter to NC is robust enough the language will be taken to be an NC language. For the NC/DN distinction such a cue is formed by sentences with more than one morphosyntactic instance of negation that is interpreted with only single semantic negation. As the majority of such cues to consist of examples consisting of *en/ne* in combination with either *niet* or a single n-word, as a result of *en*-deletion the cue robust enough to set the language as an NC language has disappeared. This leads to the following situation: the majority of NC expressions has disappeared from Dutch. Therefore the language can no longer

²³ Gysbrecht V: 1368.

²⁴ Gysbrecht V: 1410.

be interpreted as an NC language. But there are still these much rarer former NC expressions consisting of multiple n-words or n-word(s) + *niet*. Since the language learner could not interpret these instances as instances of NC, they had to be analysed as LI's as some kind of last resort option. Since in the language input the adult NC speakers still assigned an NC reading to these constructions, these LI's have been analysed as carrying only one semantic negation. The death of Dutch NC led to the birth of EMNE's.

The explanation above also accounts for the fact that EMNE's bear an emphatic reading. As addressed above the usage of multiple n-words easily leads to an emphatic effect, if it coincides with an inclusion of a redundant indefinite, which is known to yield emphatic effects. The entailed sentences in (54) are also emphatic for that reason.

(54) a. John never eats → John never eats anything.

b. John didn't say anything → John didn't say anything to anybody.

This was also the case in most Middle Dutch expressions in which multiple n-words were used, as it is the case with current languages where inclusion of an n-word indefinites can sometimes be optional. In those cases the NC variant is always emphatic, as is illustrated for Afrikaans in (55).²⁵

(55) a. Sy is *nooit nie* beskikbaar *nie*. Afrikaans
She is never neg available neg
'She's never available.'

b. Sy is *nooit* beskikbaar *nie*.
She is never available neg
'She's just never available.'

In languages in which NC constructions are obligatory, these emphatic effects do not rise, since there is no redundant indefinite present. Therefore, the Italian sentence in is not emphatic.

(56) Gianni *non* ha ditto *(*niente*).
Gianni neg has said nothing
'Gianni didn't say anything.'

Since most of the original NC constructions that had surfaced after *en*-deletion yielded this emphatic effect. The emphatic readings of EMNE's were already

²⁵ Thanks to Theresa Biberauer for providing me these examples.

there in most of their Middle Dutch counterparts. When EMNE's got reanalysed as LI's this emphatic meaning has become part of its lexical semantic representation. This explains why *nooit geen* yields an emphatic effect, but *nooit een* does not in the following minimal pair:

- (57) a. Jan leest *nooit geen* boek.
 Jan reads never no book
 'Jan never ever reads a book.'
- b. Jan leest *nooit *(een)* boek.
 Jan reads never a book
 'Jan never reads a book.'

In (57)b the indefinite article is obligatory present, and therefore there is no redundant indefinite that can trigger an emphatic effect. As the same holds for (57)a. the emphatic reading must directly be encoded in the lexical semantics of *nooit geen*.

5 Conclusions

In this paper I have discussed the difference between so-called EMNE's and plain NC constructions. I have provided five different arguments against the hypothesis that EMNE's are an NC constructions, and that for that reason EMNE's should not be taken to indicate traces of NC in DN languages.

I have argued that EMNE's are best analysed as LI's that consist of two semantic objects, of which one is semantically negative. By applying partial reconstruction at LF both semantic objects can take scope from a different position in the tree.

EMNE's are the result of the disappearance of NC in Dutch. After the loss of the preverbal negative marker *en/ne*, strings containing two n-words or an n-word and a negative marker *niet* could no longer act as a cue for NC and therefore had to be stored in the lexicon. The death of Dutch NC, so to speak, led to the birth of EMNE's.

Finally the discussion of EMNE's and the fact that they could not be taken to be instances of NC shed more light on the nature of NC and provides a new argument that NC is subject to parametric variation.

References

- Barbiers, Sjef (2002). Microvariation in negation in varieties of Dutch. *Syntactic microvariation*. Sjef Barbiers, Lenoie Cornips and Suzanne Van der Kleij. Amsterdam, Meertens Institute Electronic Publications in Linguistics: 13-40.
- Brown, Sue (1999). *The Syntax of Negation in Russian*. Stanford, CSLI Publications.
- Burridge, Kate (1993). *Syntactic change in Germanic. Aspects of language change in germanic*. Amsterdam, John Benjamins.
- Chomsky, Noam (1995). *The Minimalist Program*. Cambridge, MA, MIT Press.
- De Swart, Henriette (2006). Marking and interpretation of negation: a bi-directional OT approach. *Comparative and Cross-linguistic Research in Syntax, Semantics and Computational Linguistics, GURT 2004*. Rafaella Zanuttini, Hector Campos, Elena Herburger and Paul Portner. Washington, DC, Georgetown University Press.
- de Swart, Henriette and Ivan Sag (2002). "Negation and Negative Concord in Romance." *Linguistics and Philosophy* 25: 373-417.
- Giannakidou, Anastasia (1997). *The Landscape of Polarity Items*. Groningen, Rijksuniversiteit.
- Giannakidou, Anastasia (2000). "Negative. concord?" *Natural Language and Linguistic Theory* 18: 457-523.
- Grohmann, Kleanthes, Norbert Hornstein, et al. (2005). *Understanding Minimalism*. Cambridge, Cambridge University Press.
- Haegeman, Liliane and Rafaella Zanuttini (1991). "Negative Heads and the NEG-Criterion." *The Linguistic Review* 8: 233-51.
- Haegeman, Liliane and Rafaella Zanuttini (1996). Negative Concord in West Flemish. *Parameters and Functional Heads. Essays in Comparative Syntax*. Adriana Belletti and Luigi Rizzi. Oxford, Oxford University Press.
- Haspelmath, Martin (1997). *Indefinite pronouns*. Oxford, Oxford Studies in Typology and Linguistic Theory.
- Herburger, Elena (2001). "The Negative Concord Puzzle Revisited." *Natural Language Semantics* 9(3): 289-333.
- Horn, Larry (1989). *A Natural History of Negation*. Chicago.
- Jespersen, Otto (1917). *Negation in English and other languages*. Copenhagen.
- Koeneman, Olaf (2000). The flexible nature of verb movement, Utrecht University.
- Ladusaw, Bill (1992). *Expressing Negation*. SALT II, Ohio State University.
- Payne, John (1985). Negation. *Language typology and syntactic description. Vol.1 (Clause structure)*. Tom Shopen. Cambridge, Cambridge University Press: 197-242.
- Penka, Doris and Arnim von Stechow (2001). Negative Indefinita unter Modalverben. *Modalität und Modalverben im Deutschen*. Reimar Müller and Marga Reis. Hamburg, Helmut Buske. Linguistische Berichte, Sonderheft 9: 263-286.
- Penka, Doris and Hedde Zeijlstra (2005). Negative Indefinites in Dutch and German, Ms. University of Tuebingen.

- Platzack, Christophel (1996). Germanic Verb Second - Attract versus Repel: on optionality, a-bar movement and the symmetrical/asymmetrical verb second hypothesis. *Typologisch*. Ewald Lang and Gisela Zifonun. Berlin, Walter de Gruyter: 92-120.
- Postma, Gertjan (2002). "De enkelvoudige clitische negatie in het Middelnederlands en de Jespersen-cyclus." *Nederlandse Taalkunde* 7: 44-82.
- Selkirk, Elisabeth (1984). *Phonology and Syntax. The Relation between Sound and Structure*. Cambridge MA, MIT Press.
- Van der Koot, Hans and Ad Neeleman (2006). "On Syntactic and Phonological Representations." *Lingua* to appear.
- van Craenenbroeck, Jeroen (2006). "Transitivity failures in the left-periphery and foot-driven movement operations." *Linguistics in the Netherlands*: 52-64.
- Van der Wouden, Ton (1994). *Negative Contexts*, Rijksuniversiteit Groningen.
- von Stechow, Arnim. (2002). "Temporal Prepositional Phrases with Quantifiers: Some Additions to Pratt and Francez (2001)." *Linguistics and Philosophy* 25: 40 pages.
- Weiss, Helmut. (2002). Three types of negation: a case study in Bavarian. *Syntactic microvariation*. Sjef Barbiers, Leonie Cornips and Suzanne van der Kleij, Meertens Institute Electronic Publications in Linguistics: 305-332.
- Zeijlstra, Hedde. (2004). *Sentential Negation and Negative Concord*. Utrecht, LOT.

Historical sources

- Brabantsche yeesten* – Jan Hendrik Bormans. (Ed.). 1869. *De Brabantsche yeesten, of Rijkronijk van Brabant, zevende boek*. Brussel. Included in: *CD-ROM Middelnederlands*.
- CD-ROM Middelnederlands* – Frits van Oostrom (Ed.). 1998. *CD-ROM Middelnederlands*. Den Haag: SDU.
- Gysbreght* – Mieke Smits-Veldt. (Ed.). 1994. *Joost van den Vondel, Gysbreght van Aemstel*. Amsterdam: Amsterdam University Press. Available at: Digitale Bibliotheek voor de Nederlandse Letteren.
- Gelukkige familie* – Herman Robbers, *De Gelukkige Familie*. Amsterdam: Robbers.
- Lanceloet* – Jonckbloet, Willem (Ed.). 1846-1849. *Roman van Lancelot, (XIIIe eeuw). Naar het (eenig-bekende) handschrift der Koninklijke Bibliotheek, op gezag van het gouvernement uitgegeven*. 's-Gravenhage. Included in: *CD-ROM Middelnederlands*.
- Leevend* – Elizabeth Deken & Aagje Wolff, *Histrie van den Heer Willem Leevend*. 's Gravenhage: van Cleef.
- Vanden levene ons heren* – Willem Hendrik Beuken, W.H. (Ed.). 1968. *Vanden levene ons heren*. Zwolle, 1968. Included in: *CD-ROM Middelnederlands*.

How to submit papers?

Editors: Miriam van Staden & Enoch O. Aboh

Contact: m.vanstaden@uva.nl

Publication form: Web publication only in pdf-downloadables on the ACLC website. Links to DARE and (where applicable) group internal websites. Annual ‘Volumes’ consist of multiple ‘Issues’ that are filled incrementally as papers come in.

Contents: The ACLC Working Papers is first of all an informal platform to present new ideas and work in progress to fellow researchers inside and outside the ACLC, but it may also be used to pre-publish papers that have been submitted to (international) journals. Papers may take the form of a complete manuscript but also of a conference paper, discussion paper, report of an experiment, etc. *Authors retain all copyrights to their work* and are encouraged to publish (parts of) their paper in international journals later.

Contributors: We invite papers from ACLC members. External collaborators may be co-authors only. In the case of special issues external contributors may be accepted (e.g., in conference proceedings). We encourage especially PhD students to use this platform to share initial results and gain experience in writing academic papers.

Instructions for authors: Contributors may assume from their audience a fair amount of knowledge of the issues addressed in their papers. If peers from the relevant research group are familiar with a particular linguistic model, then authors do not have to go into detail in this respect. In this way, we hope to have concise contributions that delve right into the issues at hand.

Please find as a separate Word-document the ‘style sheet’ for the Working Papers. It contains various user-defined styles that authors may wish to make use of, e.g. for the formatting of examples. Note that tables and figures are put IN PLACE. Papers are submitted digitally in word-compatible format AND either as a pdf or as a hard copy. Any fancy artwork, special fonts, inserted video material, etc. is accepted so long as it can be incorporated into a pdf file. Publications in English and Dutch are accepted. Note carefully that all submitted papers must have been read by a native speaker. Please consult with the editors if you wish to deviate from these instructions.

Reviewing process: The editors in consultation with the director of the ACLC accept papers after a report from one or two referees. These referees will

typically be selected from the members on the editorial board, but the editors may decide that in particular cases experts from outside need to be consulted. Reports are requested only for papers that are rejected or accepted under condition of serious revision. The aim is to be quick but careful.